

PROJECT NO.: TCS/00512/09

DSD CONTRACT No. DC/2009/13 CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN

SOK KWU WAN PORTION AREA MONTHLY ENVIRONMENTAL MONITORING AND AUDIT (EM&A) REPORT (NO.44) – MARCH 2014

PREPARED FOR LEADER CIVIL ENGINEERING CORPORATION LIMITED

Quality Index			
Date	Reference No.	Prepared By	Approved By
16 April 2014	TCS00512/09/600/R0766v1	Thet ?	Smin
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Version	Date	Description
1	16 April 2014	First Submission

FROM 23 04 2014 16:40/ST.16:39 P002

URS CDM Joint Venture

Chief Engineer/Harbour Area Treatment Scheme

Drainage Services Department

5/F, Western Magistracy

2A, Pok Fu Lam Road

Hong Kong

Attention: Mr Kenneth K W Kwong

Your reference:

Our reference:

05117/6/16/426866

Date:

22 Apr 2014

BY FAX

Dear Sir

Contract No. DC/2009/13
Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan
Sok Kwu Wan Portion Area

Monthly Environmental Monitoring and Audit (EM&A) Report No. 44 (March 2014)

We refer to the Monthly EM&A Monitoring Report No. 44 for March 2014 received under cover of the email from the Environmental Team, Action-United Environmental Services and Consulting (AUES), dated on 17 April 2014. We have no comment and have verified the captioned report.

Yours faithfully

URS CDM JOINT VENTURE

Rodney lp

Independent Environmental Checker

ICWR/CKCH/lykl

Encl

cc Leader Civil Engineering

AUES ER/LAMMA CDM (Attn: Mr Ron Hung)

(Attn: Mr T.W. Tam) (Attn: Mr Ian Jones) (Attn: Mr Sylvester Hsu)



EXECUTIVE SUMMARY

ES.01. This is the 44th monthly Environmental Monitoring and Audit (EM&A) Report for Sok Kwu Wan (hereinafter 'this Report') for the designated works under the Environmental Permit [EP-281/2007/A], covering a period from 26 February 2014 to 25 March 2014 (hereinafter 'the Reporting Period').

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.02. Environmental monitoring activities under the EM&A programme in this Reporting Period are summarized in the following table.

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Air Quality	1-hour TSP	45
All Quality	24-hour TSP	15
Construction Noise	$L_{eq(30min)}$ Daytime	20
Water Quality	Marine Water Sampling	12
Inspection / Audit	ET Regular Environmental Site Inspection	3

ES.03. As informed by the Contractor, the marine work of outfall construction has been commenced on 19 July 2011, therefore, water quality was undertaken in this Reporting Period.

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.04. No exceedance of air quality and construction noise monitoring were recorded in this Reporting Period. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Environmental	Monitoring	Action	Limit	Event & Action		tion
Issues	Parameters Parameters		Level	NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	0	0	0		
	24-hour TSP	0	0	0		
Construction Noise	L _{eq(30min)} Daytime	0	0	0		
	DO	0	0	0		
Water Quality	Turbidity	0	0	0		
	SS	0	0	0	-	

Note: NOE – Notification of Exceedance

SITE INSPECTION BY EXTERNAL PARTIES

ES.05. In this Reporting Period, weekly joint site inspection by RE, the Contractor and ET was carried out on 4, 11 and 21 March 2014. All the observation has been rectified in the set time frame.

ENVIRONMENTAL COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.06. No written or verbal environmental complaint, summons or successful prosecutions were recorded in this Reporting Period.

REPORTING CHANGE

ES.07. No reporting change was made in this Reporting Period.

FUTURE KEY ISSUES

ES.08. As wet season is approaching, muddy water and other water quality pollutants via site surface water runoff into the sea body within Fish culture zone at Picnic Bay and the Secondary recreation contact subzone at Mo Tat Wan is the key issue of the Project. Mitigation measures for water

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quality should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary.

ES.09. Muddy water and other water quality pollutants via site surface water runoff into the sea body within Fish Culture Zone (FCZ) at Picnic Bay and the secondary recreation contact subzone at Mo Tat Wan is the key issue of the Project. Mitigation measures for water quality should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary.



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INTRODUCTION

PROJECT BACKGROUND

- 1.01 The Leader Civil Engineering Corporation Limited (Leader) has been awarded the *Contract DC/2009/13 Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan* (the Project) by the Drainage Services Department (DSD) on 4 May 2010. The Project is part of an overall plan approved under a statutory EIA for Outlying Islands Sewerage Stage 1 Phase 2 Package J Sok Kwu Wan Sewage Collection and Treatment (Register No. AEIAR-075/2003) and Disposal Facilities and Outlying Islands Sewerage Stage 1 Phase 1 Package C Yung Shue Wan Sewage Treatment Works and Outfall (Register No. EIA-124/BC). The Environmental Permit (EP) No. EP-281/2007 and EP-282/2007 for the Project have been obtained by the DSD on 29 June 2007 for the relevant works. After July 2009, EP-281/2007/A stead EP-281/2007 is EP for Sok Kwu Wan relevant works.
- 1.02 The Project involves construction of sewage treatment works at Sok Kwu Wan and Yung She Wan with a capacity of 1,430m³/day and 2,850m³/day respectively to provide secondary treatment, construction of 2 pumping stations at Sok Kwu Wan and 1 pumping station at Yung Shue Wan, construction of submarine outfall from the coastline and lying of underground sewerage pipeline. The site layout plan for the captioned work under the Project is showing in *Appendix A*.
- 1.03 According to the Particular Specification (PS) and *Appendix 25* of the Project, Leader should establish an Environmental Team (ET) to implement the environmental monitoring and auditing works to fulfill the requirements as stipulated in the Environmental Monitoring and Audit (EM&A) Manual. This EM&A Manual is referred to the Appendix B of the Review Report on EIA Study Sok Kwu Wan (Final) in January 2007 (Agreement No. CE 20/2005(DS)).
- 1.04 Action-United Environmental Services and Consulting (AUES) has been commissioned by Leader as the ET to implement the relevant EM&A programme. Organization chart of the Environmental Team for the Project is shown in *Appendix B*. For ease of reporting, the proposed EM&A programme for baseline and impact monitoring is spilt to following two stand-alone parts:
 - (a) Proposed EM&A Programme for Baseline and Impact Monitoring Sok Kwu Wan (under EP No. 281/2007/A varied on 23 September 2009)
 - (b) Proposed EM&A Programme for Baseline and Impact Monitoring Yung Shue Wan (under EP No. 282/2007)
- 1.05 According to the EM&A Manual of Sok Kwu Wan and Yung Shue Wan, baseline water quality monitoring should be carried out for consecutive six months before the marine work commencement. Therefore, the baseline reports of Sok Kwu Wan and Yung Shue Wan are divided to two volumes i.e. the Volume 1 for air quality and noise monitoring; and the Volume II for water quality monitoring for separate submission.
- 1.06 There is a concurrent DSD contract "DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works" undertaking at Sok Kwu Wan since April 2008.
- 1.07 Consider that the construction works of DC/2007/18 and DC/2009/13 at Sok Kwu Wan is under the same Environmental Permit and EM&A Manual, the performance criteria of air quality and construction noise at Sok Kwu Wan under the Project is recommended to adopt the Action/Limit Levels established by contract DC/2007/18. The Baseline Monitoring Report Volume 1 under the Project for air quality and noise at Sok Kwu Wan was submitted on 9 July 2010 and verified by IEC and for EPD endorsement before the relevant land works commencement on 27 July 2010.
- 1.08 This is the 44th monthly EM&A Report Sok Kwu Wan Portion Area presenting the monitoring results and inspection findings for the Reporting Period from 26 February 2014 to 25 March 2014.



REPORT STRUCTURE

1.09 The Monthly Environmental Monitoring and Audit (EM&A) Report – Sok Kwu Wan is structured into the following sections:-

SECTION 1 INTRODUCTION	
SECTION 2 PROJECT ORGANIZATION AND CONSTR	RUCTION PROGRESS
SECTION 3 SUMMARY OF MONITORING REQUIREM	MENTS
SECTION 4 AIR QUALITY MONITORING RESULTS	
SECTION 5 CONSTRUCTION NOISE MONITORING F	RESULTS
SECTION 6 WATER QUALITY MONITORING RESULT	TS
SECTION 7 WASTE MANAGEMENT	
SECTION 8 SITE INSPECTIONS	
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2 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

2.01 Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in *Appendix B*.

CONSTRUCTION PROGRESS

- 2.02 The three month rolling construction programme are enclosed in *Appendix C* and the major construction activities undertaken in this Reporting Period are listed below:-
 - Excavation for utilities construction under EVA in SKWSTW
 - Soil nailing in SKWSTW
 - Finishing works in SKWSTW & PS2
 - E&M installation in SKWSTW & PS2

SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.03 Summary of the relevant permits, licences, and/or notifications on environmental protection for this Project in this Reporting Period is presented in *Table 2-1*.

Table 2-1 Status of Environmental Licenses and Permits

Item	Description	License/Permit Status
1	Air Pollution Control (Construction Dust)	Notified EPD on 19 May 2010
	Regulation	Ref.: 317486
2	Chemical Waste Producer Registration	Issued on 8/6/2010
		WPN 5213-912-L2720-01
3	Water Pollution Control Ordinance	Approved on 29/9/2010
		Valid to: 30/09/2015
		Licence no.: WT00007567-2010
4	Billing Account for Disposal of Construction	Issued on 26 May 2010
	Waste	A/C No: 7010815

- 2.04 The "Baseline/Impact Monitoring Methodology (TCS00512/09/600/R0010Ver.4)" was set out in accordance with the Sok Kwu Wan EM&A Manual' requirements. It was approved by the Engineer Representative (ER) and agreed with the Independent Environmental Checker (IEC) and then submitted to the EPD on 8 July 2010.
- 2.05 Baseline Monitoring Report Volume 1 for Sok Kwu Wan (TCS00512/09/600/R0020Ver.3) was verified by the IEC on 12 July 2010 and submitted to EPD on 12 July 2010.
- 2.06 Baseline Water Quality Monitoring Report Volume 2 for Sok Kwu Wan (TCS00512/09/600/R0182v7) was revised against EPD comments and re-submitted on 11 October 2011.



3 SUMMARY OF BASELINE MONITORING REQUIREMENTS

ENVIRONMENTAL ASPECT

- 3.01 The EM&A baseline monitoring programme cover the following environmental issues:
 - Air quality;
 - Construction noise; and
 - Marine water quality
- 3.02 The ET implements the EM&A programme in accordance with the aforementioned requirements. Detailed air quality, construction noise and water quality of the EM&A programme are presented in the following sub-sections.
- 3.03 A summary monitoring parameters for the air quality, noise and marine water monitoring is presented in *Table 3-1*:

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters
Air Quality	1-hour TSP Monitoring by Real-Time Portable Dust Meter; and
All Quality	• 24-hour TSP Monitoring by High Volume Air Sampler.
Noise	• Leq (30min) during normal working hours; and
Noise	Leq (15min) during Restricted Hours.
	In-situ Measurements
	 Dissolved Oxygen Concentration (DO) (mg/L);
	• Dissolved Oxygen Saturation (%);
	• Turbidity (NTU);
Marina Water Ovality	• pH unit;
Marine Water Quality	• Salinity (ppt);
	Water depth (m); and
	• Temperature (°C).
	Laboratory Analysis
	Suspended Solids (SS) (mg/L)

MONITORING LOCATIONS

Air Quality

3.04 Three air monitoring stations: AM1, AM2 and AM3 were designated in the *EM&A Manual Section* 2.5. The detailed air monitoring stations is described in *Table 3-2* and graphical is shown in *Appendix D*.

Table 3-2 Location of Air Quality Monitoring Station

Sensitive Receiver	Location	
AM1	Squatter house in Chung Mei Village	
AM2	Squatter house in Chung Mei Village	
AM3	Football court	

Construction Noise

3.05 According to *EM&A Manual Section 3.4*, there were four noise sensitive receivers (NM1-NM4) designated for the construction noise monitoring. NM1, NM2 and NM4 of the three designated monitoring stations were identified and are monitored by the current DSD contract DC/2007/18. However, the premises monitoring station NM3 was rejected by the owner of 1B Sok Kwu Wan and an alternative noise monitoring station RNM3 replacement was proposed by the contract DC/2007/18 ET and accepted by the IEC and EPD before the baseline monitoring commencement in April 2008. The location RNM3 is located at Sok Kwu Wan Sitting-out area which just 3m width footpath away from the original location house 1B. The detailed construction noise monitoring stations to also under the Project is described in *Table 3-3* and graphical is shown in *Appendix D*.



Table 3-3 Location of Construction Noise Monitoring Station

Sensitive Receiver	Location
NM1	1, Chung Mei Village
NM2	20, Sok Kwu Wan
RNM3	Sok Kwu Wan Sitting-out Area
NM4	2-storey village house at Ta Shui Wan

Water Quality

3.06 Three control stations (C1-C3) and three impact stations (W1-W3) were recommended in the *EM&A Manual Section 4.5*. Impact stations W1-W3 identified at the sensitive receivers (FCZ and secondary contact recreation subzone) to monitor the impacts from the construction of the submarine outfall as well as the effluent discharge from the proposed STW on water quality. Three control stations: C1, C2 & C3 were specified at locations representative of the project site in its undisturbed condition and located at upstream and downstream of the works area. Detailed and co-ordnance of marine water quality monitoring stations is described in *Table 3-4* and the graphical is shown in *Appendix D* and would be performed for EM&A programme.

Table 3-4 Location of Marine Water Quality Monitoring Station

Station	Description	Co-ordnance		
Station	Description	Easting	Northing	
W1	Secondary recreation contact subzone at Mo Tat Wan	832 968	807 732	
W2	Fish culture zone at Picnic Bay	832 670	807 985	
W3	Fish culture zone at Picnic Bay	832 045	807 893	
C1 (flood)	Control Station	833 703	808 172	
C2	Control Station	831 467	807 747	
C3 (ebb)	Control Station	832 220	808 862	

MONITORING FREQUENCY AND PERIOD

3.07 The impact monitoring carried out in the EM&A programme is basically in accordance with the requirements in *EM&A Manual Sections* 2.7, 3.6, 4.7 and 4.8. The monitoring requirements are listed as follows.

Air Quality Monitoring

Parameters: 1-hour TSP and 24-hour TSP.

Frequency: Once in every six days for 24-hour TSP and three times in every six days for

1-hour TSP.

<u>Duration</u>: Throughout the construction period.

Noise Monitoring

<u>Parameters</u>: $L_{eq 30min}$ & $L_{eq(5min)}$, L_{10} and L_{90} .

 $L_{\text{eq(15min)}}$ & $L_{\text{eq(5min)}}$, L_{10} and L_{90} during the construction undertaken during Restricted hours (19:00 to 07:00 hours next of normal working day and full day of

public holiday and Sunday)

Frequency: Once per week during 0700-1900 hours on normal weekdays. Restricted hour

monitoring should depend on conditions stipulated in Construction Noise Permit.

Duration: Throughout the construction period.

Marine Water Quality Monitoring

Parameters: Duplicate in-situ measurements: water depth, temperature, dissolved oxygen, pH,

turbidity and salinity;

HOKLAS-accredited laboratory analysis: suspended solids



Frequency:	Three days a week, at mid ebb and mid flood tides.	The interval between 2 sets
	of monitoring will be more than 36 hours.	

Sampling Depth

- (i.) Three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m.
- (ii.) If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above sea bottom.
- (iii.) If the water depth is less than 3m, 1 sample at mid-depth is taken

<u>Duration</u>: During the course of marine works

Post-Construction Monitoring – Marine Water

3.08 Upon the marine works (dredging and HDD pipe installation) completion, 4 weeks of post-construction monitoring would be undertaken in accordance with the *Section 4.8 of EM&A Manual*. The requirements of post-construction monitoring such as the parameter, frequency, location and sampling depth is same as the impact monitoring.

MONITORING EQUIPMENT

Air Quality Monitoring

3.09 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B*. If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to the IEC to approve. The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

1-hour TSP

- 3.10 The 1-hour TSP monitor, a TSI Dust Track Aerosol Monitor Model 8520 or Sibata LD-3 Laser Dust Meter is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90° light scattering. The 1-hour TSP monitor consisted of the following:
 - a. A pump to draw sample aerosol through the optic chamber where TSP is measured;
 - b. A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and
 - c. A built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

24-hour TSP

- 3.11 The equipment used for 24-hour TSP measurement will be a TISCH High Volume Air Sampler, HVS Model TE-5170, which complied with EPA Code of Federal Regulation, Appendix B to Part 50. The HVS consists of the following:
 - a. An anodized aluminum shelter:
 - b. A 8"x10" stainless steel filter holder;
 - c. A blower motor assembly;
 - d. A continuous flow/pressure recorder:
 - e. A motor speed-voltage control/elapsed time indicator;
 - f. A 7-day mechanical timer, and
 - g. A power supply of 220v/50 hz
- 3.12 For HVS for 24-hour TSP monitoring, the HVS is mounted in a metallic cage with a top for protection and also it is sat on the existing ground. The flow rate of the HVS between 0.63m3/min and 1.7m3/min will be properly set in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50. Glass Fiber Filter 8" x 10" of TE-653 will be used for 24-hour TSP monitoring and would be supplied by laboratory. The general procedures of sampling are described as below:-
 - A horizontal platform with appropriate support to secure the samples against gusty wind should be provided;



- No two samplers should be placed less than 2 meters apart;
- The distance between the sampler and an obstacle, such as building, must be at least twice the height that the obstacle protrudes above the sample;
- A minimum of 2 meters of separation from any supporting structure, measured horizontally is required;
- Before placing any filter media at the HVS, the power supply will be checked to ensure the sampler work properly;
- The filter paper will be set to align on the screen of HVS to ensure that the gasket formed an air tight seal on the outer edges of the filter. Then filter holder frame will be tightened to the filter hold with swing bolts. The holding pressure should be sufficient to avoid air leakage at the edge.
- The mechanical timer will be set for a sampling period of 24 hours (00:00 mid-night to 00:00 mid-night next day). Information will be recorded on the field data sheet, which would be included the sampling data, starting time, the weather condition at current and the filter paper ID with the initial weight;
- After sampling, the filter paper will be collected to transfer from the filter holder of the HVS to a sealed in the envelope and sent to a local HOKLAS accredited laboratory for quantifying.
- 3.13 All the sampled 24-hour TSP filters will be kept in normal air conditioned room conditions, i.e. 70% HR (Relative Humidity) and 25°C, for six months prior to disposal.
- 3.14 The HVS used for 24-hour TSP monitoring will be calibrated before the commencement for sampling, and after in two months interval for 1 point checking of maintenance and six months interval for five points calibrate in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5028A) to establish a relationship between the follow recorder meter reading in cfm (cubic feet per minute) and the standard flow rate, Qstd, in m³/min.

Noise Monitoring

- 3.15 Sound level meter in compliance with the *International Electrotechnical Commission Publications* 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m s⁻¹.
- 3.16 All noise measurements will be performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). Leq(30 min) in six consecutive Leq(5 min) measurements will be used as the monitoring parameter for the time period between 0700-1900 hours on weekdays throughout the construction period. Leq(15 min) in three consecutive Leq(5 min) measurements for other time periods (e.g. during restricted hours) will only be conducted for monitoring the construction noise during restricted hours as necessary.
- 3.17 The sound level meter will be mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield will be fitted for all measurements. Where a measurement is to be carried out at a building, the assessment point would normally be at a position 1 m from the exterior of the building façade. Where a measurement is to be made for noise being received at a place other than a building, the assessment point would be at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.
- 3.18 Immediately prior to and following each noise measurement the accuracy of the sound level meter will be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements will be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0dB.
- 3.19 Noise measurements will not be made in fog, rain, wind with a steady speed exceeding 5m/s or



wind with gusts exceeding 10m/s. The wind speed will be checked with a portable wind speed meter capable of measuring the wind speed in m/s. An acoustic calibrator and sound level meter will be calibrated yearly. A valid of Calibration certificates will be shown in the Environmental Monitoring Report accordingly.

Water Quality Monitoring

- 3.20 Marine water quality monitoring will be conducted at the designated locations in accordance with EM&A Manual. The operating and analytical of sampling procedures are described as below:
 - A Global Positioning System (GPS) will be used to ensure that the correct location was selected prior to sample collection. A portable, battery-operated echo sounder will be used for the determination of water depth at each designated monitoring station.
 - The marine water sampler will be lowered into the water body at a predetermined depth. The trigger system of the sampler is activated with a messenger and opening ends of the sampler are closed accordingly then the sample of water is collected.
 - During the sampling, the sampling container will be rinsed to use a portion of the marine water sample before the water sample is transferred to the container. Upon sampling completion, the container is sealed with a screw cap.
 - Before the sampling process, general information such as the date and time of sampling, weather condition and tidal condition as well as the personnel responsible for the monitoring will be recorded on the monitoring field data sheet.
 - In-situ measurement including water temperature, turbidity, dissolved oxygen, salinity, pH and water depth undertake at the identified monitoring point. At each station, marine water samples are collected at three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m. Samples at 1m below water surface and 1m above sea bottom are collected when the water depth is between 3m and 6m. Only 1 sample at mid-depth is taken when the water depth is below 3m.
 - For the in-situ measurement, two consecutive measurements of sampling depth, temperature, dissolved oxygen, salinity, turbidity and pH concentration will be measured at the sea. The YSI Model 6820 Multi-parameter Water Quality Sonde is retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set is more than 25% of the value of the first reading, the reading is discarded and further readings is taken.
 - Water sample collection would be used the water sampler. During the water sample collected from the sea, it is fill in high-density polythene bottles. Before the water sample storage, the sampling bottles will be pre-rinsed with the same water sample. The sample bottles then is packed in cool-boxes (cooled at 4°C without being frozen), and delivered to HOKLAS accredited laboratory for the chemical analysis as followed APHA *Standard Methods for the Examination of Water and Wastewater* 19ed 2540D, unless otherwise specified.
 - The laboratory has be comprehensive quality assurance and quality control programmes. For QA/QC procedures, one duplicate samples of every batch of 20 samples is analyzed as followed the HOKLAS accredited requirement.
- 3.21 For the marine water sampling period, the Multi-parameter Water Quality Monitoring System will be calibrated by three month interval accordingly. The available calibration certificate will be issued to ensure the performance of Multi-parameter Water Quality Monitoring System to use for in-situ measurement.
- 3.22 All water samples will be analyzed with various chemical tests as specified in the EM&A Manual by a local HOKLAS-accredited testing laboratory (ALS Technichem (HK) Pty Ltd HOKLAS registration no. 66). Duplicate samples from each independent sampling event are required for all parameters and the samples will be mixed and analyzed in one set of laboratory analysis. The mixed process would be carried by the laboratory. The determination works should start within 24 hours after collection of the water samples or within the holding time as advised by the laboratory. The laboratory analysis result will be input in our computer database upon received from the laboratory.



EQUIPMENT CALIBRATION

- 3.23 Calibration of the HVS is performed upon installation in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). The calibration data are properly documented and the records are maintained by ET for future reference.
- 3.24 The 1-hour TSP meter was calibrated by the supplier prior to purchase. Zero response of the equipment was checked before and after each monitoring event. In-house calibration with the High Volume Sampler (HVS) in same condition was undertaken in yearly basis.
- 3.25 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis.
- 3.26 The Multi-parameter Water Quality Monitoring System will be calibrated by HOKLAS accredited laboratory of three month intervals. The available calibration certificate will be issued to ensure the performance of Multi-parameter Water Quality Monitoring System to use for in-situ measurement.
- 3.27 All updated calibration certificates of the monitoring equipment used for the impact monitoring programme in the Reporting Period would be attached in *Appendix E*.

METEOROLOGICAL INFORMATION

3.28 The meteorological information during the construction phase is obtained from the Wong Chuk Hang Station of the Hong Kong Observatory (HKO) due to it nearly the Project site.

DATA MANAGEMENT AND DATA QA/QC CONTROL

- 3.29 The impact monitoring data are handled by the ET's systematic data recording and management, which complies with in-house Quality Management System. Standard Field Data Sheets (FDS) are used in the impact monitoring programme.
- 3.30 The monitoring data recorded in the equipment e.g. 1-hour TSP meter, sound level meter and Multi-parameter Water Quality Monitoring System, are downloaded directly from the equipments at the end of each monitoring day. The downloaded monitoring data are input into a computerized database properly maintained by the ET. The laboratory results are input directly into the computerized database and QA/QC checked by personnel other than those who input the data. For monitoring activities require laboratory analysis, the local laboratory follows the QA/QC requirements as set out under the HOKLAS scheme for all laboratory testing.

REPORTING

3.31 It was agreed among the ER, IEC, Contractor and ET that, in order to streamline the EM&A report submission and to cater for the occasional delay in obtaining laboratory analysis results, the cutoff day for each month is the 25th i.e. the first day of each report is the 26th of the last month and the end day, the 25th of that month.

DETERMINATION OF ACTION/LIMIT (A/L) LEVELS

3.32 According to the Sok Kwu Wan Environmental Monitoring and Audit Manual, the air quality, construction noise and marine water quality were set up, namely Action and Limit levels are listed in *Tables 3-5*, *3-6 and 3-7* as below.

Table 3-5 Action and Limit Levels for Air Quality

Monitoring Station	Action Le	vel (μg/m³)	Limit Level (μg/m³)		
Withittoring Station	1-hour	24-hour	1-hour	24-hour	
AM1	343	173	500	260	
AM2	331	175	500	260	
AM3	353	191	500	260	



Table 3-6 Action and Limit Levels for Construction Noise

Monitoring	Action Level	Limit Level			
Location	0700-1900 hours on normal weekdays				
NM1 NM2 RNM3 NM4	When one or more documented complaints are received	75 dB(A) of $L_{eq(30min)}$ during normal hours from 0700 to 1900 hours on normal weekdays, reduced to 70 dB(A) of $L_{eq(30min)}$ for schools and 65 dB(A) during school examination periods			

Table 3-7 Action and Limit Levels for Marine Water Quality

Donomoton	Performance	In	Impact Station			
Parameter	Criteria	W1	W2	W3		
DO Concentration (Surface and Middle)	Action Level	5.39	4.64	4.71		
(mg/L)	Limit Level	5.29	4.56	4.54		
DO Concentration (Bottom)	Action Level	N/A	3.60	3.37		
(mg/L)	Limit Level	N/A	3.06	3.18		
Turbidity (Depth-Average)	Action Level	4.39	4.84	6.48		
(NTU)	Limit Level	6.06	5.99	6.71		
Suspended Solids (Depth-Average)	Action Level	12.41	9.24	10.79		
(mg/L)	Limit Level	12.68	11.28	12.25		

3.33 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in Appendix F.



4 IMPACT MONITORING RESULTS - AIR QUALITY

4.01 The impact EM&A programme was carried out as compliance with the contract Particular Specification, Sok Kwu Wan EM&A Manual and the EP. The impact monitoring schedule for the Reporting Period and next Reporting Period is presented in *Appendix G*.

Results of Air Quality Monitoring

4.02 In this Reporting Period, **45** and **15** monitoring events were performed for 1-hour TSP and 24-hour TSP monitoring respectively at the designated locations AM1, AM2 and AM3. The monitoring results for 24-hour and 1-hour TSP are summarized in *Tables 4-1*, *4-2* and *4-3*. The detail 24-hour TSP data are shown in *Appendix H* and the graphical plots of are shown in *Appendix I*.

Table 4-1 Summary of 24-hour and 1-hour TSP Monitoring Results – AM1

	24-hour			1-hour TSP			
Date	TSP $(\mu g/m^3)$	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured	
27-Feb-14	57	1-Mar-14	13:12	178	158	178	
5-Mar-14	47	6-Mar-14	9:40	80	75	70	
11-Mar-14	82	12-Mar-14	11:31	108	97	90	
17-Mar-14	56	18-Mar-14	10:47	123	119	123	
22-Mar-14	78	24-Mar-14	12:13	81	79	85	
Average	64	Avera	ge	110			
(Range)	(47-82)	(Rang	ge)	(70 - 178)			

Table 4-2 Summary of 24-hour and 1-hour TSP Monitoring Results – AM2

	24-hour			1-hour TSP		
Date	TSP (μg/m³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
27-Feb-14	31	1-Mar-14	13:13	128	124	120
5-Mar-14	34	6-Mar-14	9:38	72	85	79
11-Mar-14	54	12-Mar-14	11:28	148	137	139
17-Mar-14	53	18-Mar-14	10:44	123	125	124
22-Mar-14	71	24-Mar-14	12:14	92	88	81
Average	49	Avera	ge	111		
(Range)	(31-71)	(Rang	(72 – 148)			

Table 4-3 Summary of 24-hour and 1-hour TSP Monitoring Results – AM3

	24-hour			1-hour TSP	(μg/m³)		
Date	TSP (μg/m³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured	
27-Feb-14	39	1-Mar-14	13:28	133	157	144	
5-Mar-14	20	6-Mar-14	13:02	92	88	71	
11-Mar-14	69	12-Mar-14	11:11	169	158	151	
17-Mar-14	63	18-Mar-14	10:30	81	84	80	
22-Mar-14	110	24-Mar-14	11:56	63	54	54	
Average	60	Avera	ge	105			
(Range)	(20-110)	(Rang	e)	(54 – 169)			

- 4.03 As shown in *Tables 4-1, 4-2* and *4-3*, 1-hour and 24-hour TSP results fluctuated well below the Action Level during the Reporting Period.
- 4.04 The meteorological information during the impact monitoring days are summarized in *Appendix J*.



5 IMPACT MONITORING RESULTS - CONSTRUCTION NOISE

5.01 The noise monitoring results are presented in the following sub-sections.

Results of Construction Noise Monitoring

5.02 In this Reporting Period, a total of **20** construction noise monitoring events were undertaken at designated locations. The results for L_{eq30min} at NM1, NM2, RNM3 and NM4 are summarized in *Tables 5-1, 5-2, 5-3* and *5-4* and graphical plots are shown in *Appendix I*.

Table 5-1 Summarized of Construction Noise Monitoring Results at NM1

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30
1-Mar-14	14:50	15:20	50.1	54.2	48.5	50.3	48.8	47.0	50.5
6-Mar-14	13:53	14:23	57.4	47.1	44.9	45.4	48.4	45.0	51.1
12-Mar-14	11:22	11:52	48.3	67.5	55.9	44.9	49.6	46.8	60.2
18-Mar-14	10:49	11:19	51.0	51.3	51.1	51.3	49.5	50.5	50.8
24-Mar-14	15:14	15:44	55.7	55.5	51.1	52.5	51.8	51.6	53.5
Limit Level in dB(A) -						75			

Table 5-2 Summarized of Construction Noise Monitoring Results at NM2

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30
1-Mar-14	14:07	14:37	59.3	60.8	60.0	59.8	60.6	60.9	60.3
6-Mar-14	13:11	13:41	58.2	58.7	59.2	59.0	59.1	60.3	59.1
12-Mar-14	13:04	13:34	59.4	58.0	59.1	58.6	59.4	59.1	59.0
18-Mar-14	11:28	11:58	59.9	60.8	61.2	61.1	61.6	64.7	61.8
24-Mar-14	14:38	15:08	71.4	58.3	67.5	68.6	56.2	57.8	66.7
Limit Le	vel in dE	B(A)	-					75	

Table 5-3 Summarized of Construction Noise Monitoring Results at RNM3

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30	Corrected* Leq30
1-Mar-14	15:34	16:04	59.8	59.2	59.2	59.5	59.0	59.3	59.3	62.3
6-Mar-14	11:18	11:48	61.1	62.9	59.3	61.4	63.8	61.3	61.9	64.9
12-Mar-14	13:41	14:11	53.4	53.1	52.9	53.2	53.2	52.8	53.1	56.1
18-Mar-14	15:10	15:40	55.8	54.5	53.5	53.7	54.7	52.8	54.3	57.3
24-Mar-14	14:01	14:31	62.9	61.3	61.6	60.9	60.1	60.1	61.3	64.3
Limit Le	vel in dE	B(A)	-					75		

^{*} A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-4 Summarized of Construction Noise Monitoring Results at NM4

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30
1-Mar-14	13:01	13:31	50.2	49.4	51.7	47.3	48.9	53.3	50.6
6-Mar-14	10:42	11:12	54.1	48.2	56.1	51.7	51.8	54.4	53.4
12-Mar-14	14:17	14:47	52.9	48.4	51.3	49.6	51.3	50.8	50.9
18-Mar-14	15:47	16:17	55.1	52.3	43.9	49.3	46.5	46.7	50.6
24-Mar-14	13:26	13:56	45.2	47.1	45.4	44.7	43.8	44.6	45.3
Limit Le	vel in dE	B(A)	-						75

5.03 It was noted that no noise complaint (which is an Action Level exceedance) was received. In view of the results shown in *Tables 5-1*, *5-2*, *5-3 and 5-4* which were all below 75dB(A), no Action or Limit Level exceedance was triggered during this month.



6 IMPACT MONITORING RESULTS – WATER QULAITY

- 6.01 The construction of marine outfall works was commenced on 19 July 2011 and therefore marine water quality monitoring is required in this Reporting Period. In this Reporting Period, 12 events of water quality monitoring were carried out at the designated locations.
- 6.02 The monitoring results including in-situ measurements and laboratory testing results are presented in *Appendix H*. The graphical plots are shown in *Appendix I*.
- 6.03 During the Reporting Period, field measurements of both control and impact stations showed that marine water of the depth average of the salinity concentration was within 33.63 to 37.06 ppt, and pH value was within 6.98 to 8.33.
- 6.04 Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids (SS) in this Reporting Period, are summarized in *Tables 6-1*, 6-2, 6-3 and 6-4. A summary of exceedances for the 3 parameters are shown in *Table 6-5*.

Table 6-1 Summary of Water Quality Results – Mid-ebb Tides (Dissolved Oxygen)

Sampling	Disso			nc. of I Layer (ve. of	Dissolved Oxygen conc. of Depth Ave. of Bottom Layer (mg/L)					
date	W1	W2	W3	C1	C2	С3	W1	W2	W3	C1	C2	C3
26-Feb-14	10.75	10.92	10.45	10.29	10.44	9.93	NA	11.20	11.00	10.41	10.60	10.13
1-Mar-14	9.87	10.37	9.77	10.20	10.47	11.07	NA	10.16	10.42	10.13	10.61	11.20
4-Mar-14	9.35	9.78	9.90	9.64	9.36	9.69	NA	9.77	9.81	9.61	9.48	9.66
6-Mar-14	10.01	10.29	9.53	10.07	8.84	9.23	NA	9.97	9.67	9.47	9.41	10.12
8-Mar-14	7.55	7.00	9.16	7.07	8.52	6.53	NA	6.89	7.71	7.07	8.35	6.50
10-Mar-14	6.98	8.05	9.18	7.83	8.48	8.36	NA	7.83	9.11	7.74	8.65	8.06
12-Mar-14	8.51	8.21	8.10	8.44	8.05	8.62	NA	8.16	7.98	8.39	7.82	8.46
15-Mar-14	8.49	8.15	7.26	8.75	6.72	10.11	NA	8.01	7.28	8.63	6.81	9.99
18-Mar-14	7.69	7.93	7.90	6.93	8.53	7.18	NA	7.47	7.78	6.81	8.16	6.67
20-Mar-14	7.14	7.18	7.78	6.98	7.55	6.79	NA	7.14	7.27	6.70	7.52	6.55
22-Mar-14	6.38	6.04	6.03	5.69	6.71	5.66	NA	5.81	6.01	5.64	6.58	5.66
24-Mar-14	5.99	6.04	6.08	5.88	6.20	5.87	NA	5.95	6.00	5.82	6.09	5.72

Table 6-2 Summary of Water Quality Results – Mid-ebb Tides (Turbidity & Suspended Solids)

Sampling		Turbid	lity Dep	th Ave.	(NTU)		Sus	pended	Solids 1	Depth A	ve. (mg	<u>5/L)</u>
date	W1	W2	W3	C1	C2	C3	W1	W2	W3	C1	C2	C3
26-Feb-14	0.00	0.03	0.62	0.35	0.12	0.40	3.70	2.40	2.80	3.63	2.77	3.30
1-Mar-14	0.45	0.15	0.60	0.22	0.32	0.07	2.60	2.50	2.40	2.30	2.23	3.90
4-Mar-14	0.60	1.28	1.02	0.72	0.55	1.13	2.80	3.57	3.20	2.80	2.33	2.10
6-Mar-14	0.55	1.02	1.17	0.95	2.48	0.80	2.80	2.40	3.60	3.13	4.57	3.00
8-Mar-14	2.05	1.08	1.07	0.85	0.70	0.83	4.50	3.27	2.53	3.97	3.40	2.50
10-Mar-14	1.55	2.07	2.25	1.92	2.25	1.97	1.80	2.83	2.80	1.70	3.00	3.67
12-Mar-14	2.40	2.77	1.82	3.75	1.27	3.98	2.10	4.37	3.37	3.63	2.40	4.03
15-Mar-14	2.45	2.15	2.08	2.40	1.75	2.22	2.70	3.53	3.40	5.10	3.50	3.63
18-Mar-14	2.00	1.72	1.57	1.77	1.55	1.92	2.00	3.57	3.57	2.90	3.30	2.63
20-Mar-14	0.85	0.88	1.10	0.97	1.17	0.88	2.70	3.50	2.90	2.83	2.73	3.20
22-Mar-14	1.20	0.90	1.70	0.97	1.53	0.95	3.90	4.27	3.57	3.47	3.27	2.70
24-Mar-14	0.30	0.50	0.28	0.35	0.27	0.28	2.90	3.43	3.90	3.40	3.03	3.80



Table 6-3 Summary of Water Quality Results – Mid-flood Tides (Dissolved Oxygen)

Sampling	Disso		• •	nc. of I	-	ve. of	Dissolved Oxygen conc. of Depth Ave. of Bottom Layer (mg/L)					
date		Surf. and Mid Layer (mg/L)						B01	ttom La	yer (mg	(L)	
uate	W1	W2	W3	C1	C2	C3	W1	W2	W3	C1	C2	C3
26-Feb-14	8.32	8.65	8.81	8.80	9.07	8.82	NA	8.63	8.84	9.40	9.77	8.84
1-Mar-14	10.33	9.89	9.15	10.98	8.88	9.94	NA	9.89	9.44	10.17	8.86	9.71
4-Mar-14	12.03	11.44	11.25	11.07	10.32	11.41	NA	11.15	11.05	11.55	10.33	11.00
6-Mar-14	9.22	8.91	9.54	10.47	10.84	10.35	NA	9.23	9.74	10.51	10.64	10.11
8-Mar-14	10.97	11.65	12.39	10.60	11.95	10.61	NA	11.69	12.37	10.59	11.64	10.53
10-Mar-14	11.04	10.63	10.53	10.60	10.42	11.00	NA	10.57	10.47	10.58	10.36	10.46
12-Mar-14	9.08	9.21	10.11	8.47	10.39	8.34	NA	9.13	10.01	8.36	10.25	8.17
15-Mar-14	6.42	6.41	6.76	6.29	6.92	6.63	NA	6.43	6.61	6.41	6.86	6.57
18-Mar-14	8.81	8.56	7.76	7.84	8.07	8.12	NA	8.11	7.55	7.50	7.54	8.16
20-Mar-14	8.68	8.32	7.98	9.08	7.70	9.90	NA	8.16	7.75	8.84	7.55	9.45
22-Mar-14	5.71	5.71	5.39	6.40	7.22	6.62	NA	5.51	5.39	6.20	7.07	6.47
24-Mar-14	6.59	6.47	6.37	6.65	6.30	7.17	NA	6.37	6.38	6.69	6.24	6.74

Table 6-4 Summary of Water Quality Results – Mid-flood Tides (Turbidity & Suspended Solids)

Sampling		Turbi	dity Dep	th Ave. ((NTU)		Su	spende	d Solids	Depth A	ve. (mg/	/L)
date	W1	W2	W3	C 1	C2	C3	W1	W2	W3	C 1	C2	C3
26-Feb-14	0.45	0.63	0.22	0.48	0.07	0.57	2.20	3.33	3.03	3.10	3.13	2.83
1-Mar-14	1.40	0.38	0.55	0.53	0.10	0.13	2.10	2.47	2.37	2.37	5.13	2.60
4-Mar-14	0.65	1.30	3.02	0.70	1.23	0.62	4.40	2.60	2.73	3.57	2.83	2.33
6-Mar-14	0.85	1.45	1.33	1.08	1.08	1.32	2.40	2.70	3.50	2.60	4.37	2.87
8-Mar-14	0.60	0.97	1.30	0.62	1.20	0.55	2.60	3.80	3.70	2.93	2.70	3.60
10-Mar-14	1.50	2.93	2.25	1.77	1.60	1.70	1.80	2.63	2.67	2.63	2.90	3.50
12-Mar-14	2.15	2.15	3.27	2.23	1.92	2.62	4.10	2.57	3.03	3.37	2.40	3.03
15-Mar-14	2.70	2.05	2.43	2.10	1.87	1.98	5.80	4.50	3.53	3.40	2.67	3.70
18-Mar-14	1.00	2.37	2.97	4.00	0.90	3.65	3.10	3.80	2.97	3.93	3.30	2.77
20-Mar-14	0.75	1.02	0.82	0.85	0.88	0.83	3.00	3.00	3.40	2.43	2.73	2.60
22-Mar-14	1.80	0.72	1.75	1.00	1.63	1.08	2.50	2.87	2.80	2.90	3.40	3.53
24-Mar-14	0.20	0.40	0.50	1.25	0.33	1.20	4.40	3.43	5.20	4.50	3.83	3.53

Table 6-5 Summarized Exceedances of Marine Water Quality

Station	DO (Ave of Surf. & mid-depth)		DO (A Bottom	ve. of Layer)	Turb (Depth	idity n Ave.)	SS (Depth Ave)		Total Exceedance	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit
	Mid-Ebb									
W1	0	0	0	0	0	0	0	0	0	0
W2	0	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0	0
				Mic	l-Flood					
W1	0	0	0	0	0	0	0	0	0	0
W2	0	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0	0
No of Exceedance	0	0	0	0	0	0	0	0	0	0

6.05 For marine water monitoring, no exceedance of Action/Limit levels was recorded in this Reporting Period. Therefore, no associated corrective actions were then required.



7 ECOLOGY

- 7.01 According to Clause 3.7 and Figure 4 in the Environmental Permit No. EP-281/2007/A, a total of 12 numbers *Celtis Timorensis* (uncommon species) in Chung Mei at Sok Kwu Wan, are identified to require labeling, fencing and protection. Out of these, four numbers located in the Pumping Station No.1 area are required to be transplanted in advance of pumping station construction and the transplantation proposal has been submitted to EPD previously.
- 7.02 Regular inspection of the transplanted tree was carried out by the landscaping sub-Contractor (Melofield Nursery and Landscape Contractor Limited) on **28 February** and **15 March 2014**. As a contingency measure in case that CT7 to CT10 can no longer be recovered, additional 7 no. of *Celtis Timorensis* (No. CT_1A to CT7A) were planted adjacent to the under-monitoring Celtis Timorensis CT7 to CT10 on 30 April 2011.
- 7.03 In April 2012, CT_1A and CT_7A were damaged by the fell broken tree trunk due to tree decayed by white ants. Therefore, only 5 no. of additional *Celtis Timorensis*, namely CT_2A, CT_3A, CT4A, CT_5A and CT_6A were inspected since May 2012. Furthermore, during tree inspection on 30 July, CT4A was disappeared after typhoon No.10 on 24 July 2012 and it was certified as dead. Eventually, 4 no. of additional *Celtis Timorensis*, namely CT_2A, CT_3A, CT_5A and CT 6A were inspected in the remaining period.
- 7.04 During the tree inspection on 15 August 2013, CT2A and CT3A were lost due to typhoon on 14 August 2013. Compensatory of additional *Celtis Timorensis* is recommended to carry out by the Landscape Contractor.
- 7.05 The tree inspection report for this Reporting Period is presented in *Appendix N*.



8 WASTE MANAGEMENT

8.01 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

Records of Waste Quantities

- 8.02 All types of waste arising from the construction work are classified into the following:
 - Construction & Demolition (C&D) Material;
 - Chemical Waste;
 - General Refuse; and
 - Excavated Soil
- 8.03 The quantities of waste for disposal in this Reporting Period are summarized in *Table 8-1* and *8-2* and the Monthly Summary Waste Flow Table is shown in *Appendix K*. Whenever possible, materials were reused on-site as far as practicable.

Table 8-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) ('000m ³)	0	-
Reused in the Contract (Inert) ('000m ³)	0	-
Reused in other Projects (Inert) ('000m ³)	0	-
Disposal as Public Fill (Inert) ('000m ³)	0	-

Table 8-2 Summary of Quantities of C&D Wastes

Type of Waste	Quantity	Disposal Location
Metal (kg)	0	-
Paper / Cardboard Packing (kg)	0	-
Plastic (kg)	0	-
Chemical Wastes (kg)	0	-
General Refuses (tonne)	4.340	Outlying Islands Transfer
Continuate (comit)		Facilities (Sok Kwu Wan)

8.04 There was no site effluent discharged but the estimated volume of surface runoff was less than 50m³ in this monthly period.



9 SITE INSPECTION

- 9.01 According to the Environmental Monitoring and Audit Manual, the environmental site inspection should been formulated by ET Leader. Regular environmental site inspections had been carried out by the ET to confirm the environmental performance. In this Reporting Period, weekly joint site inspection by RE, the Contractor and ET was carried out on 4, 11 and 21 March 2014.
- 9.02 The findings/ deficiencies that observed during the weekly site inspection are listed in *Table 9-1* and the relevant checklists are attached in *Appendix L*.

Table 9-1 Site Observations

Date	Findings / Deficiencies	Follow-Up Status
4 Mar 2014	No environmental issue was observed during the site inspection	NA
11 Mar 2014	No environmental issue was observed during the site inspection	NA
21 Mar 2014	No environmental issue was observed during the site inspection	NA



10 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

10.01 No environmental complaint, summons and prosecution was received in this Reporting Period. The statistical summary table of environmental complaint is presented in *Tables 10-1*, *10-2* and *10-3*.

Table 10-1 Statistical Summary of Environmental Complaints

Donauting Powind	Environmental Complaint Statistics					
Reporting Period	Frequency	Cumulative	Complaint Nature			
27 July 2010 – 31 December 2011	1 (Nov 2011)	1 (Nov 2011)	water quality			
January - December 2012	0	1 (Nov 2011)	NA			
January - December 2013	0	1 (Nov 2011)	NA			
January – February 2014	0	1 (Nov 2011)	NA			
March 2014	0	1 (Nov 2011)	NA			

Table 10-2 Statistical Summary of Environmental Summons

Donouting Donied	Envir	Environmental Summons Statistics					
Reporting Period	Frequency	Cumulative	Complaint Nature				
27 July 2010 – 31 December 2011	0	0	NA				
January - December 2012	0	0	NA				
January - December 2013	0	0	NA				
January – February 2014	0	0	NA				
March 2014	0	0	NA				

Table 10-3 Statistical Summary of Environmental Prosecution

Donouting Povied	Environmental Prosecution Statistics					
Reporting Period	Frequency	Cumulative	Complaint Nature			
27 July 2010 – 31 December 2011	0	0	NA			
January - December 2012	0	0	NA			
January - December 2013	0	0	NA			
January – February 2014	0	0	NA			
March 2014	0	0	NA			



11 IMPLEMENTATION STATUS OF MITIGATION MEASURES

11.01 The environmental mitigation measures that recommended in the Sok Kwu Wan Environmental Monitoring and Audit covered the issues of dust, noise, water and waste and they are summarized as following:

Dust Mitigation Measure

- 11.02 Installation of 2m high solid fences around the construction site of Pumping Station P2 is recommended. Implementation of the requirements stipulated in the Air Pollution Control (Construction Dust) Regulation and the following good site practices are recommended to control dust emission from the site:
 - (a) Stockpiles of imported material kept on site should be contained within hoardings, dampened and / or covered during dry and windy weather;
 - (b) Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses;
 - (c) Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like.
 - (d) Any vehicle used for moving sands, aggregates and construction waste shall have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin.

Noise Mitigation Measure

- 11.03 As detailed in the EIA report, concreting work of the Pumping Station P1a and sewer alignment construction activities would likely cause adverse noise impacts on some of the noise sensitive receivers. Appropriate mitigation measures have therefore been recommended. The mitigation measures recommended in the EIA report are summarised below:
 - (a) Use of quiet equipment for the construction activities of the Pumping Stations and sewer alignment;
 - (b) Use of temporary noise barrier around the site boundary of Pumping Station P1a;
 - (c) Use of kick ripper (saw and lift) method to replace the breaker for pavement removal during sewer alignment construction;
 - (d) Restriction on the number of plant during sewer alignment construction;
 - (e) Use of noise screening structures in the form of acoustic shed or movable barrier wherever practicable and feasible in areas with sufficient clearance and headroom during the construction of sewer alignment;
 - (f) Adoption of manual working method wherever practicable and feasible in areas where the worksites of the proposed sewer alignment are located less than 20m from the residential noise sensitive receivers and less than 30m from the temple and the public library; and
 - (g) Implementation of the following good site practices:
 - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme.
 - Mobile plant, if any, should be sited as far away from NSRs as possible.
 - Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.
 - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.
 - Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.

Water Quality Mitigation Measure

11.04 No-dig method using Horizontal Directional Drilling (HDD) would be used for the installation of outfall pipe of about 480 m from shore to minimize the potential water quality impacts arising from the dredging works required for the submarine outfall construction. For the remaining outfall pipe of about 240m and the diffuser section, open trench dredging would still be required.



- 11.05 During the dredging works, the Contractor should be responsible for the design and implementation of the following mitigation measures.
 - Dredging should be undertaken using closed grab dredgers with a total production rate of 55m³/hr;
 - Deployment of 2-layer silt curtains with first layer enclosing the grab and the second layer at around 50, from the dredging area while dredging works are in progress;
 - all vessels should be sized such that adequate clearance (i.e. minimum clearance of 0.6m) is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;
 - all pipe leakages should be repaired promptly and plant shall not be operated with leaking pipes;
 - excess material should be cleaned from the decks and exposed fittings of barges before the vessel is moved;
 - adequate freeboard (i.e. minimum of 200m) should be maintained on barges to ensure that decks are not washed by wave action;
 - all barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; and
 - loading of barges and hoppers should be controlled to prevent splashing of dredged material to the surrounding water, and barges and hoppers should not be filled to a level which would cause the overflow of materials or sediment laden water during loading or transportation; and
 - the decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard.

Construction Run-off and Drainage

- 11.06 The Contractor should observe and comply with the Water Pollution Control Ordinance and the subsidiary regulations. The Contractor should follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in ProPECC PN 1/94 "Construction Site Drainage". The design of the mitigation measures should be submitted by the Contractor to the Engineer for approval. These mitigation measures should include the following practices to minimise site surface runoff and the chance of erosion, and also to retain and reduce any suspended solids prior to discharge:
 - Provision of perimeter channels to intercept storm-runoff from outside the site. These should be constructed in advance of site formation works and earthworks.
 - Works programmes should be designed to minimize works areas at any one time, thus minimising exposed soil areas and reducing the potential for increased siltation and runoff.
 - Sand/silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove the sand/silt particles from run-off. These facilities should be properly and regularly maintained. These facilities shall be carefully planned to ensure that they would be installed at appropriate locations to capture all surface water generated on site.
 - Careful programming of the works to minimise soil excavation works during rainy seasons.
 - Exposed soil surface should be protected by paving or hydroseeding as soon as possible to reduce the potential of soil erosion.
 - Trench excavation should be avoided in the wet season, and if necessary, these should be excavated and backfilled in short sections.
 - Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric.

General Construction Activities

11.07 Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal waters and stormwater drains. All fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.



Wastewater Arising from Workforce

11.08 Portable toilets shall be provided by the Contractors, where necessary, to handle sewage from the workforce. The Contractor shall also be responsible for waste disposal and maintenance practices

Sediment Contamination Mitigation Measure

- 11.09 The basic requirements and procedures for dredged mud disposal are specified under the WBTC No. 34/2002. The management of the dredging, use and disposal of marine mud is monitored by the MFC, while the licensing of marine dumping is the responsibility of the Director of Environmental Protection (DEP).
- 11.10 The uncontaminated dredged sediment will be loaded onto barges and transported to the designated marine disposal site. Appropriate dredging methods have been incorporated into the recommended water quality mitigation measures including the use of closed-grab dredgers and silt curtains. Category L sediment would be suitable for disposal at a gazetted open sea disposal ground.
- During transportation and disposal of the dredged marine sediments, the following measures should be taken to minimize potential impacts on water quality:
 - Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of
 material. Excess material should be cleaned from the decks and exposed fittings of barges and
 hopper dredgers before the vessel is moved.
 - Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the DEP.

Construction Waste Mitigation Measure

Good Site Practices and Waste Reduction Measures

- 11.12 It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are strictly followed. Recommendations for good site practices for the construction waste arising include:
 - Nomination of an approved person, such as a site manager, to be responsible for the implementation of good site practices, arranging for collection and effective disposal to an appropriate facility, of all wastes generated at the site.
 - Training of site personnel in proper waste management and chemical handling procedures.
 - Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.
 - Provision of sufficient waste disposal points and regular collection for disposal.
 - Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility.
 - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.
 - Maintain records of the quantities of wastes generated, recycled and disposed.
- 11.13 In order to monitor the disposal of C&D waste at landfills and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.
- 11.14 Good management and control can prevent the generation of significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:
 - segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;



- to encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the work force:
- any unused chemicals or those with remaining functional capacity should be recycled;
- use of reusable non-timber formwork to reduce the amount of C&D material;
- prior to disposal of C&D waste, it is recommended that wood, steel and other metals should be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;
- proper storage and site practices to minimise the potential for damage or contamination of construction materials; and
- plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.

General Site Wastes

11.15 A collection area should be provided where waste can be stored prior to removal from site. An enclosed and covered area is preferred for the collection of the waste to reduce 'wind blow' of light material.

Chemical Wastes

- 11.16 After use, chemical waste (eg. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Any unused chemicals or those with remaining functional capacity should be recycled. Spent chemicals should be properly stored on site within suitably designed containers, and should be collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licenced facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordinance.
- 11.17 Any service shop and minor maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakages and spillage should only be undertaken with the areas appropriately equipped to control these discharges.

Construction and Demolition Material

- 11.18 The C&D material should be separated on-site into three categories: (i) public fill, the inert portion of the C&D material (e.g. concrete and rubble), which should be re-used on-site or disposed of at a public filling area; (ii) C&D waste for re-use and/or recycling, the non-inert portion of the C&D material, (e.g. steel and other metals, wood, glass and plastic); (iii) C&D waste which cannot be re-used and/or recycled. The waste producers are responsible for its disposal at strategic landfills.
- 11.19 In order to minimise the impact resulting from collection and transportation of material for off-site disposal, it was recommended that inert material should be re-used on-site where possible. Prior to disposal of C&D material, it was also recommended that steel and other metals should be separated for re-use and/or recycling where practicable to minimise the quantity of waste to be disposed of to landfill.

Ecology Mitigation Measure

Terrestrial Ecology

- 11.20 The uncommon tree species should be labelled and probably fenced to avoid direct or indirect disturbance during construction. Works areas should avoid woodland habitats, in particular where these trees are located.
- 11.21 Construction and maintenance of site runoff control measures would be required at all work sites during construction. These should include barriers to direct runoff to sand/silt removal facilities (sand/silt/traps and/or sediment basins); minimisation of earthworks during rainy season (May to September); and coverage of sand/fill piles and exposed earth during storms.



11.22 Special attention should be paid during the breeding season of Romer's Tree Frog (March to September) to ensure their habitat landward to Pumping Station P2 site is well protected from site runoff. Barriers should be deployed completely along the landward side of the pumping station site boundary to prevent any site runoff from entering the tree frog habitat. Intactness of the barriers should be frequently inspected.

Intertidal and Subtidal Ecology

- 11.23 Construction and maintenance of site runoff control measures would be required at all work sites during construction. These should include barriers to direct runoff to sand/silt removal facilities (sand/silt/traps and/or sediment basins); use of silt curtains along coastline; minimisation of earthworks during rainy season (May to September); and coverage of sand/fill piles and exposed earth during storms.
- 11.24 To reduce impacts of sediment resuspension upon nearby habitats and organisms during dredging, all dredging should be done using a closed-grab dredger, and silt curtains should be deployed around the dredger during all dredging activity

Fisheries Mitigation Measure

11.25 Closed grab dredger, deployment of silt curtains around the immediate dredging area and low dredging rate have been recommended in Water Quality of the EIA report in order to minimise sediment release into the water column.

Landscape & Visual Mitigation Measure

- 11.26 Mitigation measures recommended in the EIA Report for landscape and visual impacts during the construction stage are summarised below.
 - Screening of site construction works by use of hoarding that is appropriate to its site context;
 - Retaining existing trees and minimising damage to vegetation where possible by close co-ordination and on site alignment adjusted of rising main and gravity sewer pipelines. Tree protective measures should be implemented to ensure trees identified as to be retained are satisfactorily protected during the construction phase;
 - Careful and efficient transplanting of affected trees (1 no.) to temporary or final transplant location (the proposed tree to be transported is a semi-mature *Macaranga tanarius* and is located at the proposed Pumping Station P2 location);
 - Short excavation and immediate backfilling of sections upon completion of works to reduce active site area;
 - Conservation of top-soil for reuse.
 - Night-time light source from marine fleets should be directed away from the residential units
- 11.27 The implementation schedule of mitigation measures is presented in *Appendix M*.
- 11.28 Leader had been implementing the required environmental mitigation measures according to the Sok Kwu Wan Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by Leader in this Reporting Period are summarized in *Table 11-1*.

Table 11-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water Quality	 Drainage channels were provided to convey run-off into the treatment facilities; and Drainage systems were regularly and adequately maintained.
	 Cover all excavated or stockpile of dusty material by impervious sheeting or sprayed with water to maintain the entire surface wet; Public roads around the site entrance/exit had been kept clean and free from dust; and Tarpaulin covering of any dusty materials on a vehicle leaving the site.



Issues	Environmental Mitigation Measures			
Noise	 Good site practices to limit noise emissions at the sources; 			
	 Use of quite plant and working methods; 			
	 Use of site hoarding or other mass materials as noise barrier to screen noise at 			
	ground level of NSRs; and			
	To minimize plant number use at the worksite.			
Waste and	• Excavated material should be reused on site as far as possible to minimize off-site			
Chemical	disposal. Scrap metals or abandoned equipment should be recycled if possible;			
Management	Waste arising should be kept to a minimum and be handled, transported and disposed of its a witchle manner.			
ivianagement	disposed of in a suitable manner,			
	• The Contractor should adopt a trip ticket system for the disposal of C&D			
	materials to any designed public filling facility and/or landfill; and • Chemical waste shall be handled in accordance with the Code of Practice on the			
	Packaging, Handling and Storage of Chemical Wastes.			
General	The site was generally kept tidy and clean.			



12 IMPACT FORECAST

12.01 Key issues to be considered in the coming month include:

Water Quality

- Erect of sand bag in proper area to avoid any muddy surface runoff from the loose soil surface or haul road during the rainy days; and
- The accumulated stagnant water should be drained away.

Air Quality

- Vehicles shall be cleaned of mud and debris before leaving the site;
- Stockpile and loose soil surface shall be covered with tarpaulin sheet or other means to eliminate the fugitive dust;
- Water spaying on the dry haul road and exit/entrance of the site in regular basis is reminded; and
- Public roads around the site entrance/exit had been kept clean and free from dust.

Noise

- Works and equipment should be located to minimize noise nuisance from the nearest sensitive receiver; and
- Idle equipments should be either turned off or throttled down;

Waste and Chemical Management

- Housekeeping on site shall be improved;
- The Contractor is advised to fence off the construction waste at a designated area in order to maintain the tidiness of the site;
- Drip tray and proper label should be provided for all chemical containers.
- C&D waste should be disposed in regular basis.



13 CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

- 13.01 This is the 44th monthly EM&A Report covering the construction period from 26 February to 25 March 2014.
- 13.02 In this Reporting Period, no 1-hour and 24-hour TSP results were found to be triggered the Action or Limit Level
- 13.03 No noise complaint (an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in this Reporting Period.
- 13.04 The monitoring result demonstrated no exceedance of Action or Limit Level of marine water quality monitoring in this Reporting Period.
- 13.05 No documented complaint, notification of summons or successful prosecution was received.
- 13.06 In this Reporting Period, weekly joint site inspection by RE, the Contractor and ET was carried out on 4, 11 and 21 March 2014. All the observation has been rectified in the set time frame. The environmental performance of the Project was therefore considered as satisfactory.

RECOMMENDATIONS

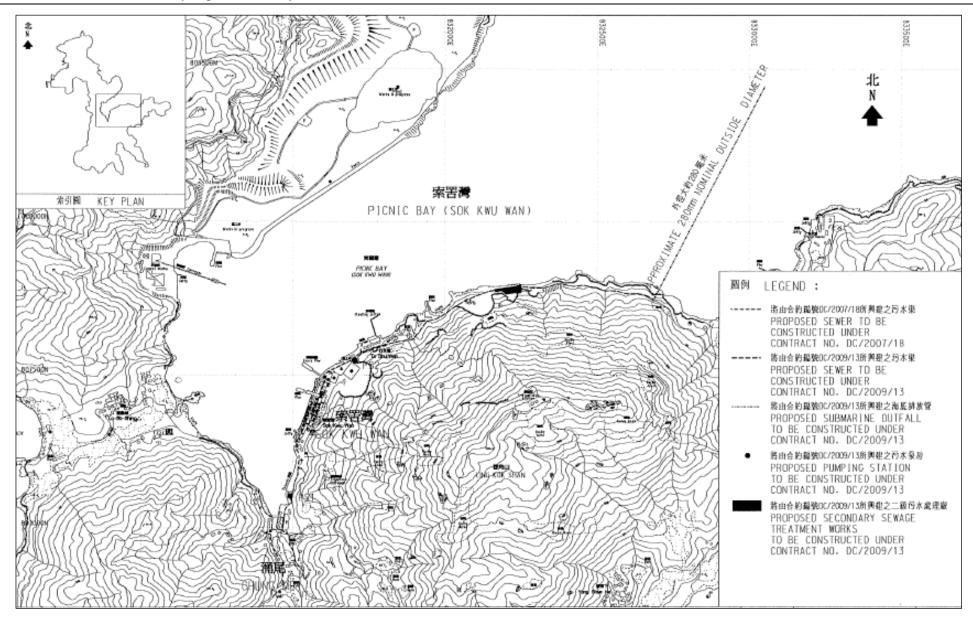
- 13.07 As wet season is approaching, muddy water and other water quality pollutants via site surface water runoff into the sea body within Fish culture zone at Picnic Bay and the Secondary recreation contact subzone at Mo Tat Wan is the key issue of the Project. Mitigation measures for water quality should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary.
- 13.08 Muddy water and other water quality pollutants via site surface water runoff into the sea body within Fish Culture Zone (FCZ) at Picnic Bay and the secondary recreation contact subzone at Mo Tat Wan is the key issue of the Project. Mitigation measures for water quality should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary.



Appendix A

Site Layout Plan – Sok Kwu Wan Portion Area







Appendix B

Organization Structure and Contact Details of Relevant Parties



Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Mr. Kenneth K W Kwong	2159-3596	2833-9162
SCJV	Engineer's Representative	Mr. Ian Jones	2982 0240	2982 4129
URS	Independent Environmental Checker	Mr. Rodney Ip	2410 3750	2428 9922
Leader	Director	Mr. Wilfred So	2982 1750	2982 1163
Leader	Contracts Manager	Mr. Vincent Chan	2982 1750	2982 1163
Leader	Site Agent	Mr. Ron Hung	2982 1750	2982 1163
Leader	Environmental Officer	Mr. Leung Man Kin	2982 8652	2982 8650
Leader	Environmental Supervisor	Mr. Chan Chi Kau	2982 8652	2982 8650
Leader	Sub-Agent	Mr. Leung Man Kin	2982 1750	2982 1163
Leader	Senior Safety Officer	Mr. Andy Lau	2982 1750	2982 1163
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959 6059	2959 6079
AUES	Team Supervisor	Mr. Ben Tam	2959 6059	2959 6079

Legend:

DSD (Employer) – Drainage Services Department

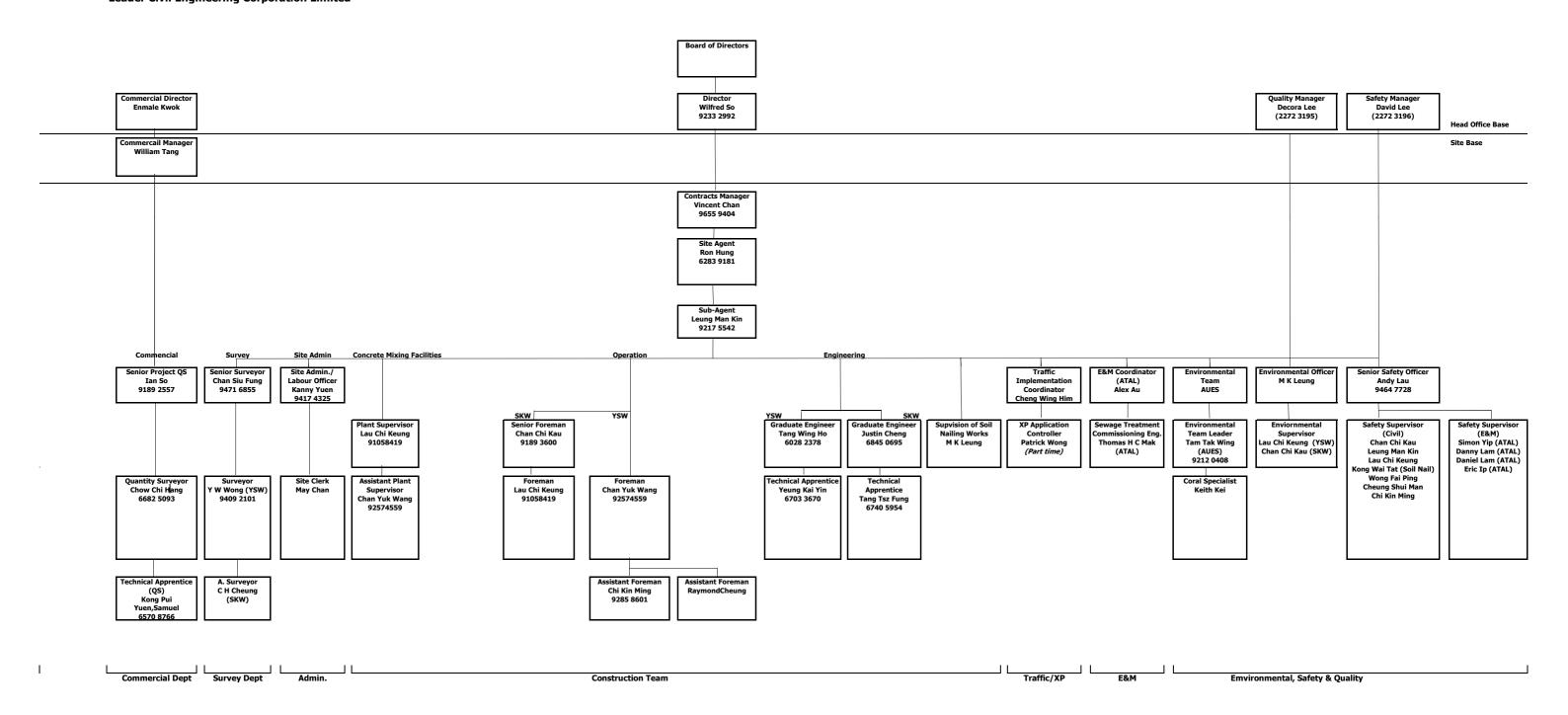
CDM (Engineer) –URS Hong Kong Limited CDM Joint Venture

Leader (Main Contractor) – Leader Civil Engineering Corporation Limited

URS (IEC) – URS Hong Kong Limited

AUES (ET) – Action-United Environmental Services & Consulting

Effective on 1-Mar-14





Appendix C

Three Months Rolling Construction Programme

Activity	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Predecessors	Successors	2013 NOV DEC	JAN FI	2014 EB MAR	APR
Project Key	Date						1.0			NOV	JAN FI	.b WAR	AFK
KD0030	Section W1 - Slope Works in Portion A & C	0	100		14/10/11 A		14/10/11 A	YSW0100, YSW0110, YSW0140,	KD0125, KD0130, YSW01755				
KD0040	Section W2 - YSW STW & Submarine Outfall (1370d)	0	0		16/06/14 *		16/06/14 *	0 * E&M0700, YSW0400, YSW0800, YSW0925, YSW16704, YSW1700	KD0125, KD0132				
KD0050	Section W3 - Footpath Diversion in Ptn G	0	0		30/12/13 *		24/03/11 *	-1012d SKW0481	KD0125	J 1	Section W3 - Footpath D		
KD0060	Section W4 - Slope Works in Portios H & I	0	0		30/12/13 *		27/03/12 *	-643d * SKW05938, SKW059416	KD0125, KD0135, SKW05941		Section W4 - Slope Wor	rks in Portios H & I	
KD0070	Section W5 - P.S. No. 1 in Portion D	0	0		30/12/13 *	-	10/02/12 *	-689d * SKW0741	KD0125		Section W5 - P.S. No. 1		
KD0080	Section W6 - Sewer & PS No2 in Ptn. E & F	0	0		30/12/13 *		10/02/12 *	-689d * SKW0971	KD0125	0 1 10	Section W6 - Sewer & P		
KD0090	Section W7 - SKW STW, RM & Sm. Outfall	0	0		07/10/14 *		07/10/14 *	0 * E&M3360, SKW1221, SKW1291,	KD0125, KD0165, SKW0491				
								SKW1431, SKW1441, SKW1521,				24000	
KD0100	Section W8 - Landscape Softworks	0	0		30/12/13 *		05/04/13 *	-269d * SKW1611, SKW1621			Section W8 - Landscape	Softworks	
KD0110	Section W9 - Establishment Works	0	0		03/04/14 *		03/04/14 *	0 * SKW1631	KD0125				♦ Section W9
KD0125	Project Completion	0	0		12/09/15 *		12/09/15 *	0 * KD0010, KD0020, KD0030, KD0040, KD0050, KD0060, KD0070, KD0080, KD0090, KD0110, SKW0541				***************************************	
KD0130	Completion of Maintenance Period of W1	1	0	31/12/13	31/12/13 *	13/10/12	13/10/12 *	-444d KD0030, YSW01755, YSW01805, YSW01810			Completion of Maintenan	ce Period of W1	1
KD0132	Completion of Maintenance Period of W2	1	0	15/06/15	15/06/15 *	15/06/15	15/06/15 *	0 E&M0730, KD0040					
KD0135	Completion of Maintenance Period of W4	1	0	31/12/13	31/12/13 *	27/03/13	27/03/13 *	-279d KD0060, SKW05947, SKW1581			Completion of Maintenan	ce Period of W4	
KD0145	Completion of Maintenance Period of W5	1	0	31/12/13	31/12/13 *	10/02/13	10/02/13 *	-324d			Completion of Maintenan	ce Period of W5	
KD0155	Completion of Maintenance Period of W6	1		31/12/13	31/12/13 *	10/02/13	10/02/13 *	-324d E&M2130, E&M2180, SKW0961,		101 1	Completion of Maintenan		
KD0165	Completion of Maintenance period of W7	1		06/10/15	06/10/15 *	06/10/15	06/10/15 *	0 * KD0090, SKW0595, SKW05972,					
	(2)		10-01-01-0			20 10 101		SKW0861					
Preliminary (in the second se		11111111		1	-
PRE0020	Pre-condition Survey	60	1.55	17/05/10 A		17/05/10 A		KD0020					
PRE0040	Erection of Engineer's Site Accommodation at YSW	60		17/05/10 A		17/05/10 A		KD0020 KD0020				i	i
PRE0050 PRE0060	Taking over the Secondary Engineer's Site Accomm Application of Consent from Marine Department	75 60	7.7.	17/05/10 A		17/05/10 A		KD0020					
PRE0090	Working Group Meeting for Outfall Construction	120	10.0	17/05/10 A 17/05/10 A		17/05/10 A 17/05/10 A		KD0020	SKW1151	1111111			
PRE0100	Application & Consent of XP from HyD (Mo Tat Rd)	120		17/05/10 A		17/05/10 A		KD0020	SKW1491, SKW1501			į	i
PRE0130	Setup Web-site for EM&A Reporting	90		17/05/10 A		17/05/10 A		KD0020					1
Preliminary (With the second of				
Technical Sub	The state of the s								i de la la compania de la compania del compania del compania de la compania del compania de la compania del la compania del compania de	11111111			1
YSW0820	ABWF installation	90	90	15/01/13 A	17/01/14	15/01/13 A	15/04/13	-277d YSW0690, YSW0705	E&M0630, E&M0640		ABWF installat	ion	i
Process Desig	n of SKWSTW & YSWSTW										H'		1
E&M0010	Submission	38		17/05/10 A		17/05/10 A		KD0020	E&M0020, E&M0040, E&M0235				1
E&M0020	Vetting and Comment by ER	21		24/06/10 A		24/06/10 A	1 11 11 11 11 11 11 11	E&M0010	E&M0030, E&M0040	11111111		1	1
E&M0030	Revision and Resubmission	125		15/07/10 A			16/11/10 A	E&M0020	E&M0080	(1111) 11 (1111) 11 (1111) 11			
E&M0080	Approval from the Engineer	14	100	17/11/10 A	30/11/10 A	17/11/10 A	30/11/10 A	E&M0030	E&M0295	11111111			
Hydraulic Desi	Submission	04	400	15/07/10 A	04/09/40 A	15/07/10 A	04/09/40 A	E&M0010, E&M0020	E&M0050, E&M0101, E&M0240,	11111111		1	1
E&M0050	Vetting and Comment by ER	- 21		05/08/10 A		05/08/10 A		E&M0040	E&M0060	11111111			
E&M0060	Revision and Resubmission	97		19/08/10 A		The second second	10/10/10 A	E&M0050	E&M0430			į	
E&M0430	Approval from the Engineer	7		24/11/10 A			30/11/10 A	E&M0060	E&M0295			1	
YSW1536	Water tightness test	40		12/08/13 A		12/08/13 A		YSW1500	YSW1538	1111111 11111111 11111111 11111111			
Equipment Su	bmission & Approval									- (1111111 111111111 11111111			
E&M0070	Submission of Membrane Module	50	100	17/05/10 A	05/07/10 A	17/05/10 A	05/07/10 A	KD0020	E&M0090	111111111111111111111111111111111111111		-	-
E&M0090	Vetting and Comment by ER	14	100	06/07/10 A	19/07/10 A	06/07/10 A	19/07/10 A	E&M0070	E&M0100	11111111		1	
E&M0100	Revision and Resubmission	14		20/07/10 A		20/07/10 A	46-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-	E&M0090	E&M0160	111111111		į	í !
E&M0101	Submission of Equipment	90		05/08/10 A		05/08/10 A		E&M0040	E&M0102	11111111			1
E&M0102	Vetting and Comment by ER	60		03/11/10 A		03/11/10 A		E&M0101	E&M0103	11111111 11111111 11111111111111111111			
E&M0103	Revision and Resubmission	60		01/02/11 A		01/02/11 A		E&M0102	E&M0110, E&M0120, E&M0130, E&M0390	11111111			1
E&M0110	Approval on Coarse Screens	30		25/05/11 A	4	25/05/11 A	-	E&M0103 E&M0103	E&M0390 E&M0400, E&M3060	11111111 11111111 111111111		1	
E&M0120 E&M0130	Approval on Fine Screens Approval on Pumps	30		12/09/11 A 23/06/11 A		12/09/11 A 23/06/11 A		E&M0103	E&M0410, E&M3070			İ	į
E&M0140	Approval on Submersible Mixers	30		23/06/11 A 23/03/11 A	The second secon	23/06/11 A 23/03/11 A		E&M0103	E&M0420, E&M3080				
		- 30	100	20,00/11 A	23/30/11 A	A	25/55/11 A	1	a 1 supering A street 1975				I A
Start date Finish date Data date Run date	05/05/10			0		Con	tract No.	eering Corp. Ltd. DC/2009/13		Date 28/02/14	Revision 0	n Check	ed Approved VC
Page number	1A Systems, Inc. Critical point Summary point Start milestone point Finish milestone point	,						ment Works at YSW & SKW e (March 2014 - May 201					

Activity ID	Description	Original Duration	Percent Early Complete Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2013 NOV DEC	JAN FEB	014 MAR APR
E&M0150	Approval on Grit Removal Equipment	30	100 10/10/11 A	10/10/11 A	10/10/11 A	10/10/11 A		E&M0103	E&M0380, E&M3030	11(1(1)) H 11(1(1)) H (11(1)) H	11 11 11	
E&M0160	Approval on MBR Membrane Modules (M.M.)	105	100 03/08/10 A	24/02/11 A	03/08/10 A	24/02/11 A		E&M0100	E&M0360, E&M0370, E&M3010	(11111111 11	11	
E&M0170	Approval on Sludge Dewatering Equipment	30	100 01/09/11 A	01/09/11 A	01/09/11 A	01/09/11 A		E&M0103	E&M0440, E&M3090	1111111 N		
E&M0180	Approval on Valves, Pipes & Fittings	30	100 19/11/11 A	04/08/13 A	19/11/11 A	04/08/13 A		E&M0103	E&M0450, E&M3100			
E&M0190	Approval on Penstocks	30	100 15/11/11 A	15/11/11 A	15/11/11 A	15/11/11 A		E&M0103	E&M0460, E&M3110			
E&M0200	Approval on Instrumentation	30	100 21/06/11 A	08/03/12 A	21/06/11 A	08/03/12 A		E&M0103	E&M0470, E&M3130		ii Maa a LVan	
E&M0210	Approval on MCC & LVSB	30	95 19/11/11 A	01/01/14	19/11/11 A	11/09/11	1 1 1 1 1 1 1	E&M0103	E&M0480, E&M3140		approval on MCC & LVSB	DC Fauinment
E&M0220	Approval on BS Equipment	30	85 30/11/11 A	04/02/14	30/11/11 A	10/05/12	0.000	E&M0103, E&M0280	E&M0490, E&M3150		Approval on	
E&M0230	Approval on FS Equipment	30	85 30/11/11 A	16/02/14	30/11/11 A	20/11/11	-819d	E&M0103, E&M0290	E&M0295, E&M0320, E&M0500,	111111111111111111111111111111111111111	Appro	val on FS Equipment
Drawings Sub	mission & Approval			-						[11111]	Sub. P&ID Drawing	
E&M0235	Sub. P&ID Drawings	100	75 24/06/10 A	24/01/14	24/06/10 A	28/10/11		E&M0010	E&M0250	11111111 11 11		1
E&M0240	Sub. Plant GA Drawings	45	68 04/08/10 A	14/01/14	04/08/10 A	28/10/11	-808d	E&M0040	E&M0250, E&M0280, E&M0290			
E&M0250	Sub. Builder's Works Requirements Drawings	15	100 04/08/10 A	31/01/13 A		31/01/13 A		E&M0235, E&M0240, E&M0260,	E&M0280, E&M0290		Sub. Mechanical Instal	lation Drawings
E&M0260	Sub. Mechanical Installation Drawings	60	70 27/09/10 A	17/01/14	27/09/10 A	28/10/11		E&M0040	E&M0250	ring triple	Sub. Electrical Installatio	
E&M0270	Sub. Electrical Installation Drawings	60	75 27/09/10 A	14/01/14	27/09/10 A	28/10/11		E&M0040	E&M0250, E&M0280	- HARRING C	-Sub. BS Installa	
E&M0280	Sub. BS Installation Drawings	120	95 27/09/10 A	30/01/14	27/09/10 A	06/05/12		E&M0240, E&M0250, E&M0270	E&M0220	:::::::::::::::::::::::::::::::::::::::		Installation Drawings
E&M0290	Sub. FS Installation Drawings	120	85 13/11/11 A	11/02/14	13/11/11 A	15/11/11	-819d	E&M0240, E&M0250	E&M0230	11111111	Sub. 1 S	Installation Drawings
Statutory Subr									Fallogo	111111111111111111111111111111111111111		
E&M0295	Preparation of Submission to HEC	39	100 01/11/11 A	100 200 0 000 3 00	01/11/11 A			E&M0080, E&M0230, E&M0430	E&M0300	111111111		Application & Approval from
E&M0300	Application & Approval from HEC	150	90 01/11/11 A	03/03/14	01/11/11 A	22/11/12	,,,,,	E&M0295	E&M0305	11111111 1	11	Application & Approval from I
E&M0305	Provision of Cables to the STWs	180	0 03/03/14	30/08/14	22/11/12	21/05/13	13.6.5	E&M0300	E&M0680	111111111		Form 314 Submission to FSD
E&M0320	Form 314 Submission to FSD	14	0 16/02/14	02/03/14	07/05/13	21/05/13	-285d	E&M0230	E&M0325, E&M0670	11111111 1 1 1		H
E&M0325	Submission to WSD	14	100 01/11/11 A	29/02/12 A		29/02/12 A		E&M0320	E&M0670, E&M0680			
E&M0330	Form 501 Submission to FSD (YSW)	28	0 11/11/15	09/12/15	14/11/13	11/12/13		E&M0500	E&M0700			
E&M0340	Form 501 Submission to FSD (SKW)	28	0 06/08/14	03/09/14	11/06/14	08/07/14	1 10 2 2	E&M3160	E&M3360			Form 501 Submission to FSD (F
E&M0350	Form 501 Submission to FSD (PS1 & PS2)	28	0 28/01/14	25/02/14	14/11/12	11/12/12	-441d	E&M2016	E&M11800, E&M2180	111111111111111111111111111111111111111		-Offi 30 i Subinission to i 3D (i
ung Shue V	Van									[1111111		
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	Project Commencement Date								E&M2001, KD0125, PRE0020, PRE0040, PRE0050, PRE0060, PRE0090, PRE0100, PRE0130, SKW0250, SKW0588, SKW0651, SKW0881, SKW1131, SKW1481, SKW1591, SKW1611, YSW0020, YSW0050, YSW0075, YSW0180, YSW0200, YSW0220, YSW0240,			
YSW0020	Approval of Environmental Team	16	100 17/05/10 A	01/06/10 A	17/05/10 A	01/06/10 A		KD0020	YSW00201, YSW0030, YSW00351,	111111111111111111111111111111111111111	11	
'SW00201	Change Baseline Monitoring Location (Air&Noise)	59	100 02/06/10 A		02/06/10 A	30/07/10 A		YSW0020	YSW0030	111111	1 11 1 11 1 11	
/SW0030	Baseline monitoring (Air & Noise)	23	100 31/07/10 A	22/08/10 A	31/07/10 A	22/08/10 A		YSW0020, YSW00201	YSW0035			
/SW0035	Baseline Monitoring Report Submission (A & N)	16	100 23/08/10 A	E T D C T D C T T C	23/08/10 A			YSW0030	YSW0120, YSW01545, YSW0500,	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		
/SW00351	Submission & Approval for Monitoring Method (W)	58	100 02/06/10 A		02/06/10 A			YSW0020	YSW0040			
/SW0040	Baseline monitoring (Water)	155	100 30/07/10 A	31/12/10 A	30/07/10 A	31/12/10 A		YSW0020, YSW00351	YSW0350	11111111		
/SW0050	Erect Hoarding and Fencing	60	100 19/05/10 A	17/07/10 A	19/05/10 A	17/07/10 A		KD0020	YSW0155	11111111 1 11111111 1 11111111 1	i ii	
ection W1 - S	lope Works in Portion A & C									1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11	
YSW0075	Mobilization	30	100 17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A		KD0020	YSW0080, YSW0100	111111111111111111111111111111111111111	1 11 11 11 11 11 11 11 11 11 11 11 11 1	
/SW0080	Site Clearance	30	100 16/06/10 A	15/07/10 A	16/06/10 A	15/07/10 A		YSW0075	YSW0085, YSW0090, YSW0120	11111111		
/SW0085	Initial Survey	14	100 02/07/10 A	15/07/10 A	02/07/10 A	15/07/10 A		YSW0080	YSW0120	111111111		
′SW0090	Verify the Rock Boulder required Stablization Wk	249	100 16/07/10 A	21/03/11 A	16/07/10 A	21/03/11 A		YSW0080	YSW0100, YSW0110			
YSW0100	Removal of Rock Boulder	257	100 20/09/10 A	03/06/11 A	20/09/10 A	03/06/11 A		YSW0075, YSW0090	KD0030	11111111	ij	
/SW0110	Stablizing work for rock boulder	35	100 16/07/11 A	19/08/11 A	16/07/11 A	19/08/11 A		YSW0090	KD0030	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
'SW0120	Cut the slope to design profile	2	100 24/09/10 A	25/09/10 A	24/09/10 A	25/09/10 A		YSW0035, YSW0080, YSW0085	YSW0131, YSW0155, YSW0170	111111111111111111111111111111111111111		
YSW0131	Mobilization of Plant and Material of Soil Nails	14	100 12/09/10 A	25/09/10 A	12/09/10 A	25/09/10 A		YSW0120	YSW0132	111111111111111111111111111111111111111	1 11	
'SW0132	Erect Scaffold and Working Platform	2	100 26/09/10 A	27/09/10 A	26/09/10 A	27/09/10 A		YSW0131	YSW0133	11111111	1 11 1 11 1 11	
/SW0133	Setting out and Verify Locations of Soil Nails	45	100 28/09/10 A	11/11/10 A	28/09/10 A	11/11/10 A		YSW0132	YSW0134			
'SW0134	Drilling and Soil Nails Installation	43	100 19/10/10 A	30/11/10 A	19/10/10 A	30/11/10 A		YSW0133	YSW0135	111111111111111111111111111111111111111		
/SW0135	Construction of Nail Heads	12	100 01/12/10 A	12/12/10 A	01/12/10 A	12/12/10 A		YSW0134	YSW0136	111111		
′SW0136	Mesh Installation on Cut Slope	3	100 13/12/10 A	15/12/10 A	13/12/10 A	15/12/10 A		YSW0135	YSW01361	11111111		
'SW01361	Verify alignment of access & channels on slope	118	100 16/12/10 A	12/04/11 A	16/12/10 A	12/04/11 A		YSW0136	YSW0140	111111111111111111111111111111111111111		
art date nish date ata date un date age number	05/05/10 04/12/17 31/12/13 28/03/14 2A Systems, Inc. Early bar Progress bar Critical bar Summary bar Progress point Critical point Summary point Start milestone point			nstructio	Con n of Sew	tract No. age Treat	DC/20 ment	Corp. Ltd. 09/13 Works at YSW & SKW rch 2014 - May 201		Date 28/02/14	Revision 0	Checked Approv

Activity ID	Description	Original Duration	Percent Early Complete Start	Early Finish	Late Start	Late Finish	Total Float		Successors	2013 NOV DEC		JAN	FEB 20°	4 MAR	APR
YSW0140	Construct U-channels & Step Channel on Cut Slope	182	100 13/04/11 A	11/10/11 A	13/04/11 A	11/10/11 A		YSW01361	KD0030						
SW0153	Removal of Ex U-Channel where clash with B. Wall	151	100 10/05/11 A	07/10/11 A	10/05/11 A	07/10/11 A		YSW01545	YSW01750			11	1		
SW01545	Temporary Diversion of Drainage	244	100 08/09/10 A	09/05/11 A	08/09/10 A	09/05/11 A		YSW0035	YSW0153			11	1	1	1 1 1
SW0155	RC Barrier Wall Bay 1-13 (below Ground Level)	256	100 26/09/10 A	08/06/11 A	26/09/10 A	08/06/11 A		YSW0050, YSW0120	KD0030, YSW0170, YSW0175,	1		11	1		1
SW0170	RC Barrier Wall Bay 1-13 (above Ground Level)	125	100 09/06/11 A	11/10/11 A	09/06/11 A	11/10/11 A		YSW0120, YSW0155	KD0030]		ii	1	1	()
'SW0175	Construct U-channels and Catchpits (Phase 1)	76	100 09/06/11 A	23/08/11 A	09/06/11 A	23/08/11 A		YSW0155	KD0030				1	1	1
'SW01750	Construction of subsoil drain (phase 1)	7	100 12/10/11 A		12/10/11 A			YSW0153, YSW0155	KD0030			11	-	i i	
SW01755	Construct subsoil drain (phase 2)	14	100 06/12/12 A	100000000000000000000000000000000000000	06/12/12 A			KD0030, YSW01800	KD0130		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1		()
'SW01800	RC Barrier Wall Bay 14 (below & above Ground)	87	100 03/09/12 A		03/09/12 A			YSW0760	YSW01755, YSW01810		1 1 (1 (1 (1 (1 (1 (1 (1 (1 (1	11	1		1 1
SW01805	Hydroseeding	14	100 02/03/13 A		02/03/13 A			YSW01810	KD0130			H			1 1
SW01810	Construct U-channels and Catchpits (Phase 2)	30	100 29/11/12 A	No. of the last of	29/11/12 A			YSW01800	KD0130, YSW01805	- 11		11			
	SW STW & Submarine Outfall	30	100 20/11/12/4	ZZITZITZI	20/11/12/1	ZZITZITZI		102000000	(3-74-5-74-4-4-5-5-4-4-4-4-4-4-4-4-4-4-4-4	-		11	4		i i
Civil & Structu										11		11			1 1
		7	85 09/05/13 A	06/02/14	09/05/13 A	20/04/14	91/	E&M1110	E&M11800		111111 8	11	Hydraulic Te	st of Pipeworks	1-1
E&M1120	Hydraulic Test of Pipeworks	/		06/02/14	09/05/13 A		010	Lawitto	KD0125			11	i		1.1
KD0010	Receive Letter of Acceptance	0	100	05/05/10 A		05/05/10 A			KD0123		1	#		11	1 1
YSW0412	Mobilization	30	100 17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A		KD0020	YSW0422	11			1	11	
YSW0422	Site Clearance	30	100 17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A		KD0020, YSW0412	YSW0432, YSW0500, YSW0610,	1.	111111 1 1 1 1	11		11	
YSW0432	Initial Survey	14	100 02/06/10 A		02/06/10 A			YSW0422	YSW0510	1		11		31	1 1
YSW STW -	The state of the s	1.1	100 02/00/10/1								111111	11			
YSW0500	ELS & Excavation for Inlet Pumping Station	105	100 08/09/10 A	21/12/10 A	08/09/10 A	21/12/10 A		YSW0035, YSW0422	YSW0510	1		11		11	
	Programme and the state of the	129	100		22/12/10 A	_		YSW0432, YSW0500	YSW0520	- 1		ii		H	
YSW0510	Sub-structure construction (Inlet Pumping Stn)		100 22/12/10 A		30/04/11 A			YSW0510	YSW05701	1:	1111111 1	ii			1 1
YSW0520	Backfill & Remove ELS (Inlet Pumping Stn)	40	100 30/04/11 A					YSW0660	YSW0540, YSW05701	- i	[11111] I	ii	ì	11	
YSW0530	ELS & Excavation for Equalization Tank	159	100 01/01/11 A		01/01/11 A				YSW0550, YSW05901	- 1		-11		11	
YSW0540	Sub-structure construction (Equalization Tank)	112	100 09/06/11 A		09/06/11 A			YSW0530			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
YSW0550	Backfilling & Remove ELS (Equalization Tank)	20	100 29/09/11 A	18/10/11 A	29/09/11 A			YSW0540	YSW05901	-		iii		- 11	
YSW05701	ELS & Excavation for Grit Chambers	28	100 09/06/11 A	06/07/11 A	09/06/11 A	06/07/11 A		YSW0520, YSW0530	YSW05711, YSW05731	1				ii ii	
YSW05711	Construct sub-structure for Grit Chambers	106	100 07/07/11 A	20/10/11 A	07/07/11 A	20/10/11 A		YSW05701	YSW05721, YSW05911		1111111 E	H	1	11	
YSW05721	Backfill & Remove ELS for Grit Chambers	12	100 21/10/11 A	01/11/11 A	21/10/11 A	01/11/11 A		YSW05711	YSW05911		1111111 E		1	11	1 1
YSW05731	ELS & Excavation for Grease Separators (GS)	34	100 07/07/11 A	09/08/11 A	07/07/11 A	09/08/11 A		YSW05701	YSW05741	- 1	111111111111111111111111111111111111111	- 2	1	11 11 11	
YSW05741	Construct sub-structure for Grease Separators	52	100 10/08/11 A	30/09/11 A	10/08/11 A	30/09/11 A		YSW05731	YSW05751		1111111 1		1	- 11	1 1
YSW05751	Install Dia.400 Puddles in Grease Separators	27	100 01/10/11 A	27/10/11 A	01/10/11 A	27/10/11 A		YSW05741	YSW05752	- 1	1111111		1		
YSW05752	Construct sub-structure for GS (above puddles)	48	100 28/10/11 A	14/12/11 A	28/10/11 A	14/12/11 A		YSW05751	YSW05761	j.			1	11	1 1
YSW05761	Backfill & remove ELS for Grease Separators	10	100 15/12/11 A	24/12/11 A		24/12/11 A		YSW05752	YSW0580, YSW05921	1		ii	= 3	11	
YSW0580	Excavate to Formation for Deodorizer Room	10	100 25/12/11 A		25/12/11 A	NOW HALL		YSW05761	YSW05801, YSW05922	1		11		11	
YSW05801	Excavate to formation - Grid J-N/5-7	40	100 04/01/12 A		04/01/12 A			YSW0580	YSW05802, YSW05923	1	111111	1			
YSW05802	Excavate to formation - Grid GA-H/5-7	10	100 13/02/12 A	The state of the s	13/02/12 A			YSW05801	YSW05924	1 1		11		11	
		90	100 13/02/12 A	100 to 10	29/09/11 A			YSW0540, YSW0550	YSW06001	1				- 11	
YSW05901	G/F to 1/F Construction Grid GA-K/1-5							YSW05711, YSW05721	YSW06011, YSW06035	-		- 11		- !!	
YSW05911	G/F to 1/F Construction Grid N-S/1-5	80	100 21/10/11 A		21/10/11 A	_		YSW05761	YSW06021			1		- 11	1 1
YSW05921	G/F to 1/F Construction Grid K-N/1-5	45	100 25/12/11 A	100000000000000000000000000000000000000	25/12/11 A			_ 13/A 77/16 A				ii i	- 1		
YSW05922	G/F to 1/F Construction for Deodorizer Room	80	100 04/01/12 A		04/01/12 A			YSW0580	YSW06022			11			
YSW05923	G/F to 1/F Construction for Grid J-N/5-7	60	100 13/02/12 A		13/02/12 A	100000000000000000000000000000000000000		YSW05801	E&M0530, E&M0540, E&M0550,	-		11			
YSW05924	G/F to 1/F Construction for Grid GA-H/5-7	50	100 28/05/12 A	1.17.7.4 1.15.47.0	28/05/12 A	16/07/12 A		YSW05802, YSW06023	YSW06034	-		11			
YSW06001	1/F to Roof Constuction for Grid GA-K/1-5	87	100 28/12/11 A	2014/2014/2014		23/03/12 A		YSW05901	YSW0800	_		11		11	1 1
YSW06011	1/F to Roof Constuction for Grid N-S/1-5	75	100 09/01/12 A	23/03/12 A	09/01/12 A	23/03/12 A		YSW05911	YSW0800			11		- 11	
YSW06021	1/F to Roof Constuction for Grid K-N/1-5	44	100 08/02/12 A	22/03/12 A	08/02/12 A	22/03/12 A		YSW05921	YSW07201			11 11 11			
YSW06022	1/F to Roof Constuction for Deodorizer Room	60	100 24/03/12 A	22/05/12 A	24/03/12 A	22/05/12 A		YSW05922	YSW0800			ii 11			
YSW06023	1/F to Roof Constuction for Grid J-N/5-7	45	100 13/04/12 A	27/05/12 A	13/04/12 A	27/05/12 A		YSW05923	E&M0580, YSW05924			11			
YSW06034	1/F to Roof Constuction for Grid GA-H/5-7	28	100 27/07/12 A	13/08/12 A		13/08/12 A		YSW05924	YSW0800						1 1
YSW06035	Construct buffle walls in Grease Separators	90	100 18/04/12 A	16/07/12 A		16/07/12 A		YSW05911	YSW07204						1 1
YSW07201	Water tightness test for Inlet Pumping Station	60	100 23/03/12 A	21/05/12 A		21/05/12 A		YSW06021	YSW07202, YSW0800			11		11	1 1
YSW07201	Water tightness test for Equalization Tanks	42	100 23/05/12 A	02/07/12 A		02/07/12 A		YSW07201	E&M0600, YSW07203, YSW0800					H	1 1
				29/09/12 A	100000000000000000000000000000000000000	29/09/12 A		YSW07202	YSW07204, YSW0800						
YSW07203	Water tightness test for Grit Chambers	42 32	100 17/09/12 A 100 03/10/12 A			31/10/12 A		YSW06035, YSW07203	E&M0570, YSW07205, YSW0800					11	11
YSW07204	Water tightness test for Grease Separators			31/10/12 A					YSW0800	or water channels					
YSW07205	Water tightness test for water channels	21	100 31/08/13 A	23/09/13 A		23/09/13 A		YSW07204		or water triainleis		ABWF installat	ion	11	
YSW0800	ABWF installation	271	99 03/07/12 A	02/01/14	03/07/12 A	16/06/14	165	d YSW06001, YSW06011, YSW06022,	KD0040	II.		VDAAL IIISTAIIST	10/1	- 11	1 1
0	05/05/10 04/12/17 31/12/13 28/03/14 3A Early bar Progress bar Critical bar Summary bar Progress point Critical point Critical point Summary point			nstructio	Con n of Sew	tract No. l age Treat	DC/20 ment	g Corp. Ltd. 009/13 Works at YSW & SKW rch 2014 - May 201		28/02/14	Э	Revision	Revision 0	Checked RH	Appro VC
je number	₹ Critical point														

Date	Revision	Checked	Approved
28/02/14	Revision 0	RH	VC

Activity ID	Description	Original Duration	Percent Early Complete Start	Early Finish	Late Start	Late Finish	Total Predecessors	Successors	2013 2014 NOV DEC JAN FEB MAR
sw stw -	GLT-X				1 - 1 - 3 -				
SW0610	Excavate to formation	10	100 08/09/10 A	17/09/10 A	08/09/10 A	17/09/10 A	YSW0035, YSW0422	YSW0620	
SW0620	Base slab construction	248	100 18/09/10 A	23/05/11 A	18/09/10 A	23/05/11 A	YSW0610	YSW0630	
SW0630	G/F to 1/F construction	205	100 24/05/11 A	14/12/11 A	24/05/11 A	14/12/11 A	YSW0620	YSW0640	
SW0640	1/F to Roof Construction	64	100 15/12/11 A	16/02/12 A	15/12/11 A	16/02/12 A	YSW0630	YSW0810	
SW0810	ABWF installation	80	100 28/12/11 A	16/03/12 A	28/12/11 A	16/03/12 A	YSW0640	E&M0610, E&M0620, E&M0630,	
SW STW -	GL F - H & DN Tanks								
SW0650	ELS & Excavation for DN Tanks	37	100 08/09/10 A	14/10/10 A	08/09/10 A	14/10/10 A	YSW0035, YSW0422	YSW0660	
SW0660	Sub-struction construction (DN Tanks)	78	100 15/10/10 A	31/12/10 A	15/10/10 A	31/12/10 A	YSW0650	YSW0530, YSW0670	
SW0670	Backfill & Remove ELS (DN Tanks)	70	100 01/01/11 A	11/03/11 A	01/01/11 A	11/03/11 A	YSW0660	YSW0680	
SW0680	Base slab construction (SD1, SD2 & MBR4)	17	100 12/03/11 A	28/03/11 A		28/03/11 A	YSW0670	YSW0690	
'SW0690	Construct Superstructure SD1, SD2 & MBR4	82	100 29/03/11 A	18/06/11 A		18/06/11 A	YSW0680	YSW0710, YSW0820	
'SW06901	Construct Superstructure of DN Tanks	28	100 15/05/12 A	11/06/12 A		11/06/12 A	YSW0735	YSW0830	111111111111111111111111111111111111111
SW0705	Water test for MBR 4	47	100 01/10/12 A	16/11/12 A		16/11/12 A	YSW0710	E&M0510, E&M0640, YSW07055,	
SW07055	Water test for ND1 & SD2	54	100 17/11/12 A	10/01/13 A		10/01/13 A	YSW0705, YSW07105	E&M0610	
	STANGE THE STAN STAN STAN STAN STAN STAN STAN STAN	7	100 1//1//12 A			30/09/12 A	YSW0690	YSW0705, YSW07105	
SW0710	Apply protective paint for SD1 & SD2	7	100 24/09/12 A	7.000	01/10/12 A	07/10/12 A	YSW0710	YSW07055	
'SW07105	Apply protective paint for SD1 & SD2	28		13/09/13 A		13/09/13 A	YSW06901	YSW0850	
'SW0830	Water test for DN Tanks	28	100 14/07/13 A		27/04/13 A		YSW0830	E&M0610	
SW0850	Apply protective paint for DN Tanks	6	100 27/04/13 A	11/0//13 A	2//04/13 A	11/0//13 A	10110000		
SW STW -	The state of the s		Jaa 20000000000000000000000000000000000		04/04/25 *		YSW03601, YSW03605	YSW0732	
'SW0730	Completion of HDD	0	100 21/01/12 A		21/01/12 A			YSW0733	
'SW0732	Excavate for MBR 2 & 3	20	100 21/01/12 A		21/01/12 A		YSW0730		
SW0733	Construct basement of MBR 2 & 3	20	100 10/02/12 A		10/02/12 A		YSW0732	YSW0735, YSW0740	
'SW0735	Construct superstructure of MBR 2	75	100 01/03/12 A	14/05/12 A	01/03/12 A	14/05/12 A	YSW0733	YSW06901, YSW0736, YSW08302,	
SW0736	Construct superstructure of MBR 3	100	100 15/05/12 A	14/05/12 A	15/05/12 A	14/05/12 A	YSW0735	YSW08302, YSW08305	
SW0740	ELS & excavate for Outfall Shaft	75	100 01/03/12 A	14/05/12 A	01/03/12 A	14/05/12 A	YSW0733	YSW0750	
'SW0750	Construct basement of Outfall Shaft	19	100 15/05/12 A	02/06/12 A	15/05/12 A	02/06/12 A	YSW0740	YSW07501	
'SW07501	Connect additional flange to HDPE pipe (VO 042)	5	100 03/06/12 A	07/06/12 A	03/06/12 A	07/06/12 A	YSW0750	YSW07502	
'SW07502	Construct sub-structure of Outfall Shaft	16	100 08/06/12 A	23/06/12 A	08/06/12 A	23/06/12 A	YSW07501	YSW0760	
'SW0760	Backfill & remove ELS (outfall shaft)	8	100 24/06/12 A	01/07/12 A	24/06/12 A	01/07/12 A	YSW07502	YSW01800, YSW07601, YSW07603	3,
'SW07601	Construct superstructure for Outfall Shaft	30	100 03/07/12 A	31/07/12 A	03/07/12 A	31/07/12 A	YSW0760	YSW08301, YSW08305	
/SW07603	ELS & excavate for FSH Water Supply Tank	25	100 01/06/12 A	25/06/12 A	01/06/12 A	25/06/12 A	YSW0760	YSW07604	
'SW07604	Construct substructure for FSH Water Supply Tank	24	100 26/06/12 A	19/07/12 A	26/06/12 A	19/07/12 A	YSW07603	YSW07605	
SW07605	Backfill & remove ELS for FSH Water Supply Tank	12	100 20/07/12 A	31/07/12 A	20/07/12 A	31/07/12 A	YSW07604	YSW07607	
'SW07607	Construct basement of MBR 1 & Workshop	24	100 01/08/12 A				YSW07605	YSW07608, YSW07609	
/SW07608	Construct superstructure for FSH Water Supply Tk	37	100 25/08/12 A				YSW07607	YSW08304, YSW08305	
'SW07609	Construct superstructure for MBR 1	37	100 25/08/12 A	- 10/2-10/2-10 to 10 to 10	25/08/12 A		YSW07607	YSW07610, YSW08303, YSW1470	
'SW07610	Construct Workshop, FSSH Pump Rm, PW Pump Rm	31	100 03/10/12 A		03/10/12 A	2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	YSW07609	YSW0840, YSW16606, YSW16607,	
		42	100 03/04/13 A		03/04/13 A		YSW0380, YSW07601	E&M0690	
'SW08301	Water tightness test for Outfall Shaft Water tightness test for MBR 2 & 3	95	100 03/04/13 A	- A. V. S. V. S. V. S. V. S.	10/08/13 A		YSW0735, YSW0736	E&M0520, E&M0590, E&M0605,	
'SW08302		19	100 10/08/13 A	100000000000000000000000000000000000000	30/11/12 A		YSW07609	E&M0520	
'SW08303	Water tightness test for MBR 1	32	100 30/11/12 A		31/08/13 A		YSW07608	E&M0610	est for FSH Water Supply Tank
'SW08304	Water tightness test for FSH Water Supply Tank	32	100 31/06/13 A	01/10/13 A	31/00/13 A	01/10/13 A			
	el / Sprinkler Pump Rm	100	100 00/40/40 4	15/09/12 ^	02/10/12 A	15/08/13 A	YSW0735, YSW0736, YSW07601,	E&M0610	
SW08305	Apply protective paint	120	100 02/10/12 A		The second second		YSW07610, YSW16606	YSW0860	
SW0840	ELS & excavate to formation (+0 mPD approx.)	40	100 25/02/13 A		25/02/13 A	1 2 2 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	YSW0840	YSW0890	
SW0860	Sub-structure construction	40	100 19/04/13 A		19/04/13 A			YSW0910	
SW0880	Backfill & remove ELS	35	100 21/06/13 A		21/06/13 A		YSW0890	YSW0880, YSW0900	
SW0890	Construction Ground Slab at +5.2mPD	40	100 04/06/13 A		04/06/13 A		YSW0860		
SW0900	Superstructure construction upto +9.2mPD	35	100 04/06/13 A	01/08/13 A		01/08/13 A	YSW0890	YSW0910, YSW0925	Water test
'SW0910	Water test	28	0 31/12/13	27/01/14	17/02/14	17/03/14	49d YSW0880, YSW0900	YSW0915	Apply protective paint
SW0915	Apply protective paint	14	0 31/12/13	13/01/14	26/01/14	09/02/14	27d YSW0910	E&M0640, YSW0925	ABWF installation
SW0925	ABWF installation	30	35 16/07/13 A	19/01/14	16/07/13 A	16/06/14	149d YSW0900, YSW0915	KD0040	
mergency S	torage Tank						Transport	2/014/4 400	
SW1470	ELS & excavate to formation (-1.5mPD Approx.)	16	100 17/09/12 A		17/09/12 A		YSW07609	YSW1480	
SW1480	Sub-structure construction	14	100 03/10/12 A	16/10/12 A	03/10/12 A	16/10/12 A	YSW1470	YSW1490	

Start date 05/05/10

Finish date 04/12/17

Data date 31/12/13

Run date 28/03/14

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c Primavera Systems, Inc.

Early bar

Progress bar

Critical bar

Summary bar

Progress point
Critical point
Summary point
Start milestone point
Finish milestone point

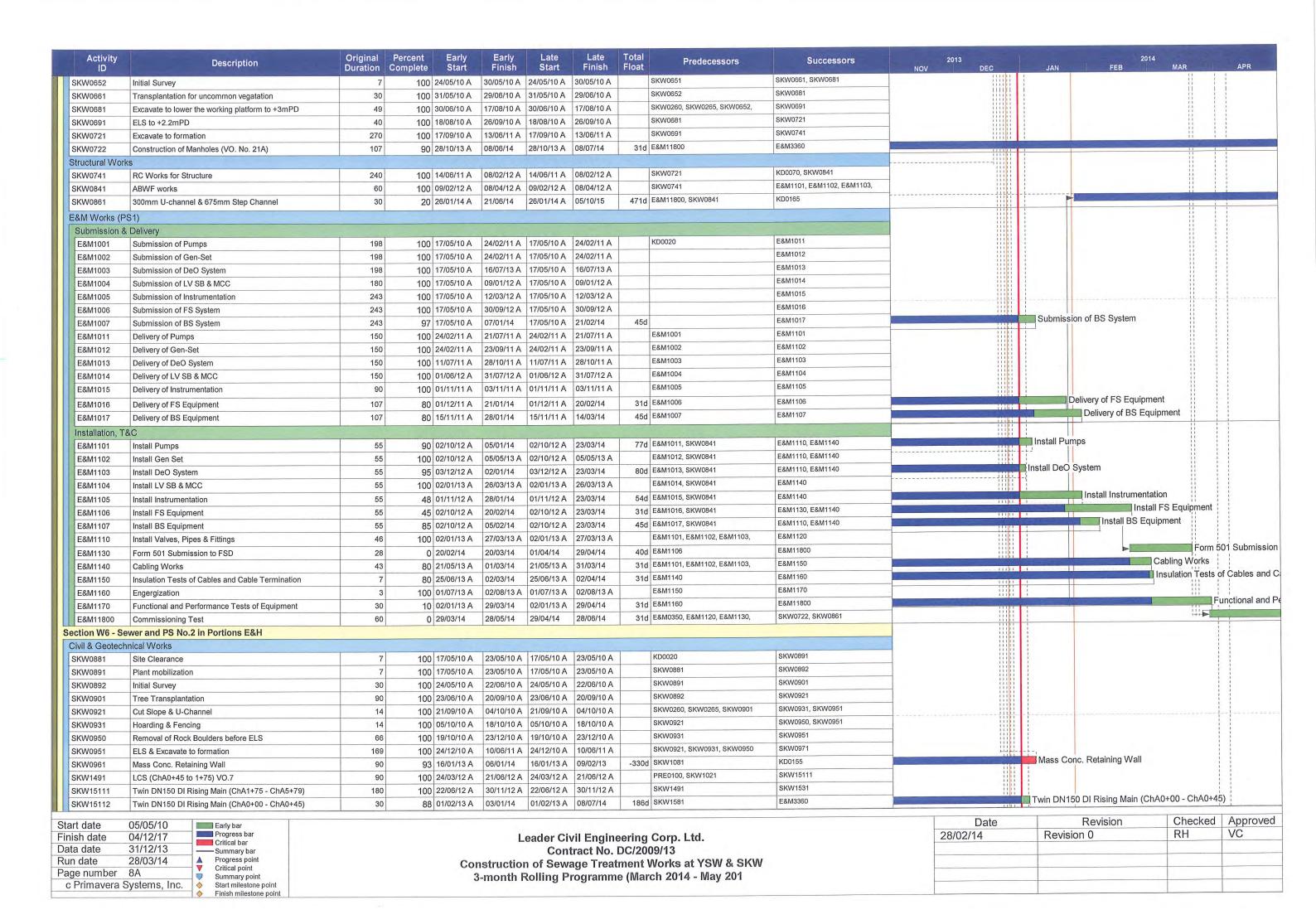
Leader Civil Engineering Corp. Ltd.
Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & SKW
3-month Rolling Programme (March 2014 - May 201

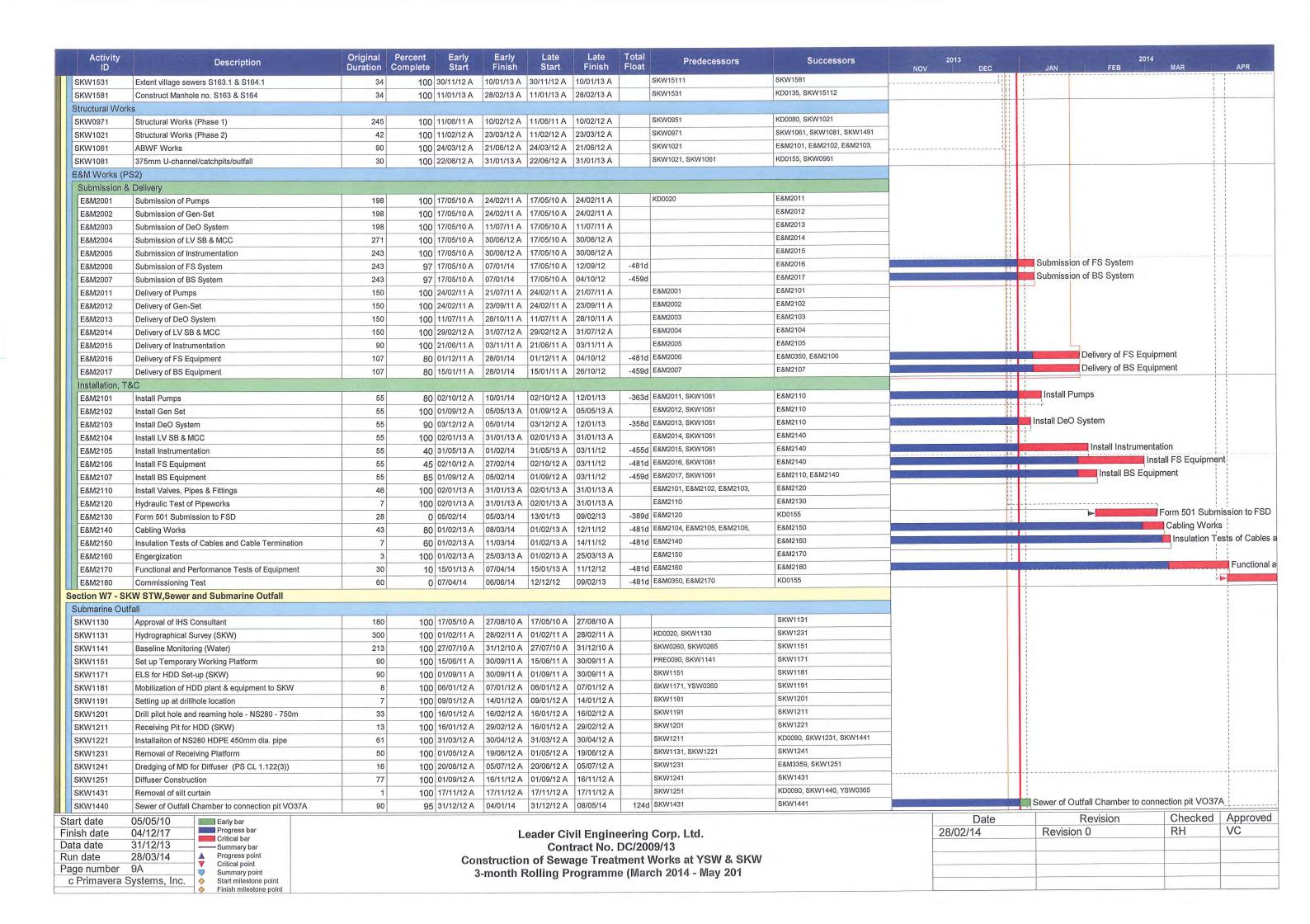
Date	Revision	Checked	Approved
28/02/14	Revision 0	RH	VC
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Activity ID	Description	Original Duration	Percent Early Complete Start	Early Finish	Late Start	Late Finish	Total Predecessors	Successors	2013 NOV DEC	JAN	2014 FEB N	AR	APR
YSW1490	Backfill & extract sheetpile	3	100 17/10/12 A	19/10/12 A	17/10/12 A	19/10/12 A	YSW1480	YSW1500	11111111	1	1		
YSW1500	Superstructure construction upto +10.5mPD	41	100 20/10/12 A	29/11/12 A	20/10/12 A	29/11/12 A	YSW1490	YSW1530, YSW1536		1	1		(
YSW1530	Underground pipeline works	40	100 20/07/13 A	01/10/13 A	20/07/13 A	01/10/13 A	YSW1500	E&M0690, YSW1680	eline works	i 1 -1			
YSW1538	Apply protective paint	30	100 04/03/13 A	05/03/13 A	04/03/13 A	05/03/13 A	YSW1536	YSW1540					
YSW1540	ABWF installation	40	100 03/04/13 A	01/10/13 A	03/04/13 A	01/10/13 A	YSW1538	E&M0690	1	1			<u> </u>
Road, Drain,	Cable Draw Pits & Ducting												
YSW16601	ELS & excavate 6m deep sewer (FM1 - YFMH13)	90	100 04/08/13 A	15/01/14 A	04/08/13 A	15/01/14 A	YSW0760, YSW16606, YSW16607,	YSW16602	mmu	ELS & exc	avate 6m deep sewer	1.6	
YSW16602	Lay pipe & backfill 6m deep sewer (FM1 - YFMH13)	45	100 20/01/14 A	10/02/14 A	20/01/14 A	10/02/14 A	YSW16601	E&M0680, YSW1700	11111111		Lay pipe & backfil	41 1	the section of the
YSW16603	Construct UU & pipes along sea side (Grid Q-X)	60	50 04/03/14 A	29/01/14	04/03/14 A	10/02/14	12d YSW16607, YSW16608	YSW16604, YSW16703		Co	nstruct UU & pipes al	ong sea side ((Grid Q-X)
YSW16604	Construct UU & pipes along sea side (Grid XA-D)	60	100 22/07/13 A	06/02/14 A	22/07/13 A	06/02/14 A	YSW16603	YSW16605, YSW16701			Construct UU & pip	es along sea s	side (Grid
YSW16606	Construct UU & pipes along hill side (Grid D-Q)	90	100 10/10/12 A	01/09/13 A			YSW07610	YSW0840, YSW16601	de (Grid D-Q)				1
YSW16607	Construct UU & pipes along hill side (Grid Q-X)	72		100000000000000000000000000000000000000	20/08/12 A	100000000000000000000000000000000000000	YSW07610	YSW16601, YSW16603	de (Grid Q-X)				
YSW16608		72	3377	100000000000000000000000000000000000000	30/11/12 A	200000000000000000000000000000000000000	YSW07610	YSW16601, YSW16603, YSW1690	de (Grid XA-D)				į.
	Construct UU & pipes along hill side (Grid XA-D)						YSW16604	YSW16702		ct Boundary Wall (G	rid XA-D)		1
YSW16701	Construct Boundary Wall (Grid XA-D)	80	100 10/01/13 A	15/12/13 A	10/01/13 A		18d YSW16605, YSW16701	YSW16703		, , , , , , , , , , , , , , , , , , , ,	Construct Bound	dary Wall (Grid	d D-Q)
YSW16702	Construct Boundary Wall (Grid D-Q)	80	60 01/01/14 A	12/02/14	01/01/14 A			YSW16704, YSW1700	-			11 1	truct Boun
YSW16703	Construct Boundary Wall (Grid Q-X)	80	30 21/02/14 A	26/03/14	21/02/14 A		12d YSW16603, YSW16702		11.1111111	-1			
YSW16704	ABWF installation for Boundary Wall	240	0 31/12/13 A	27/08/14	31/12/13 A		-72d YSW16703	KD0040	11111111		Fire Hydrant 8	pipeline insta	allation
YSW1680	Fire Hydrant & pipeline installation	120		16/02/14	26/01/13 A		4d YSW1530	YSW1690, YSW1700	- HARABAHIAN	at I	7 ile i iyurant e	- Pipomio mate	
YSW1690	Construction of Road Kerbs, Downpipes, U-channel	180	60 02/01/13 A	29/04/14	02/01/13 A		4d YSW16608, YSW1680	YSW1700	- 1		2052 - AMAZON		1
YSW1700	Road Paving	110	60 23/05/14 A	12/06/14	23/05/14 A	16/06/14	4d YSW16602, YSW16605, YSW16703, YSW1680, YSW1690	KD0040	111111111111111111111111111111111111111				[
							TOTT TOOS, TOTT TOO		111111111111111111111111111111111111111				1
Submarine Out				Tellient	1	100/00/10 4	KD0000	YSW0350					
YSW0180	Coordination of HEC	53			17/05/10 A		KD0020		-			11 1	Ì
YSW0200	Submission and Approval of Ecologist	60	100 17/05/10 A		17/05/10 A		KD0020	YSW0210			1		
YSW0210	Ecology Survey	211	100 16/07/10 A		16/07/10 A		YSW0200	YSW0350	_				1
YSW0220	Submission and Approval of In. Hydro Survey	103	100 17/05/10 A	27/08/10 A	17/05/10 A	27/08/10 A	KD0020	YSW0230		1 1		8 1	1
YSW0230	Hydrogrophical Survey (YSW)	157	100 28/08/10 A	31/01/11 A	28/08/10 A	31/01/11 A	YSW0220	YSW0350				11 1	1 1
YSW0240	Material Submission, Approval of HDPE pipe	319	100 17/05/10 A	31/03/11 A	17/05/10 A	31/03/11 A	KD0020	YSW0360			1		1
YSW02401	Clarify Coordinate of Point Y (Reply of RFI 010)	83	100 28/06/10 A	18/09/10 A	28/06/10 A	18/09/10 A	KD0020	YSW0250			1		-
YSW0250	Submit and Approval of Method Statement for HDD	188	100 19/09/10 A	25/03/11 A	19/09/10 A	25/03/11 A	YSW02401	YSW0260, YSW0270, YSW0340			1	11 1	1
YSW0260	Submission of HDD Method Statement to HEC	14	100 26/03/11 A	08/04/11 A	26/03/11 A	08/04/11 A	YSW0250	YSW0340			1		1
YSW0270	Additional G.I. Boreholes (YSW)	123	100 19/09/10 A	19/01/11 A	19/09/10 A	19/01/11 A	YSW0250	YSW0280, YSW0290	1111111				
YSW0280	Submission of propose alignment	44	100 20/01/11 A	04/03/11 A	20/01/11 A	04/03/11 A	YSW0270	YSW0310, YSW0340					1
YSW0290	Submission of Marine Notice	69	100 20/01/11 A	The Country of the Co		29/03/11 A	YSW0270	YSW0350				# 1	I.
YSW0310	Construction of Entry Pit and Preparation Work	27					YSW0280	YSW0320					1
YSW0320	Prepare of HDD Drill Rig Set-up (YSW)	28	100 01/04/11 A	_		28/04/11 A	YSW0310	YSW0330, YSW0350				11 1	1 1
		20	100 01/04/11 A			14/04/11 A	YSW0320	YSW0340					1
YSW0330	Establishment of HDD plant & equipment	14		10,000,000,000,000	3,00 6 83 2 5 5 5 5	28/04/11 A	YSW0250, YSW0260, YSW0280,	YSW0350			-		1
YSW0340	Setting up at drillhole location	^	100 15/04/11 A	1 - Part / 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2		The second second	YSW0040, YSW0180, YSW0210,	YSW0360	-		į.		1
YSW0350	Drill pilot hole and reaming hole - NS400 - 530m	229	100 29/04/11 A			13/12/11 A	YSW0240, YSW0350	SKW1181, YSW03601, YSW03620,	_		į.		1
YSW0360	Installation of NS400 HDPE 530m	17	100 14/12/11 A			30/12/11 A					į	- 11 - 1	1
YSW03601	Demobilization of HDD plant & equipment	7	100 31/12/11 A	2000 0000000000000000000000000000000000		06/01/12 A	YSW0360	YSW03605, YSW03641, YSW0730	-				1
YSW03605	Remove Entry pit of HDD	14	100 07/01/12 A			20/01/12 A	YSW03601	YSW0730	<u> </u>	- -			1
YSW03620	Removal of Receiving Pit	14	100 31/12/11 A			13/01/12 A	YSW0360	YSW0365	<u> </u>				1
YSW03641	Prepare backfilling material under VO 046A	120	A STATE OF THE STA			05/05/12 A	YSW03601	YSW0365	_				1
YSW0365	Set up of Silt Curtain as per EP	2	100 23/11/12 A	24/11/12 A	23/11/12 A	24/11/12 A	SKW1431, YSW03620, YSW03641	YSW0370	_		Į.		
YSW0370	Dredging of Marine Deposit for Diffuser (YSW)	5	100 24/11/12 A	29/11/12 A	24/11/12 A	29/11/12 A	YSW0360, YSW0365	YSW0380			1		
YSW0380	Diffuser Construction (YSW)	60	100 30/11/12 A	20/06/13 A	30/11/12 A	20/06/13 A	YSW0370	E&M0690, YSW0400, YSW08301					:
/SW0400	Removal of silt curtain	30	100 30/04/13 A	31/05/13 A	30/04/13 A	31/05/13 A	YSW0380	KD0040	11111111				1
&M Works - \									- 111111111111111111111111111111111111		1		į
E&M0360	Delivery of MBR Memb. Mod. (MBR Tk 4)	118	100 24/02/11 A	21/06/11 A	24/02/11 A	21/06/11 A	E&M0160	E&M0510	11111111		1		
E&M0370	Delivery of MBR Membrane Modules - 2nd Shipment	236				17/10/11 A	E&M0160	E&M0520			1		
E&M0380	Delivery of Grit Removal Equipment	81				29/12/11 A	E&M0150	E&M0530			-		
E&M0390	Delivery of Coarse Screens	129		_	-	12/01/12 A	E&M0110	E&M0540			1		
E&M0400	Delivery of Coarse Screens Delivery of Fine Screens	80				30/11/11 A	E&M0120	E&M0550			1		
						05/09/11 A	E&M0130	E&M0560			1	11 1	
&M0410	Delivery of Pumps	75	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				E&M0140	E&M0570	-		1		1
E&M0420	Delivery of Submersible Mixers	230	100 26/02/11 A	20/02/11 A	20/02/11 A	26/02/11 A	Lamoria				· · · · · · · · · · · · · · · · · · ·	Na a classical	A 15 15 11 1
art date ish date ta date n date ge number	05/05/10 04/12/17 31/12/13 28/03/14 5A Systems, Inc. Early bar Progress bar Critical bar Summary bar Progress point Critical point Summary point Start milestone point			nstructio	Con n of Sew	tract No. l	eering Corp. Ltd. DC/2009/13 ment Works at YSW & SKW e (March 2014 - May 201		Date 28/02/14	Revision 0			Approv VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2013 NOV DEC	JAN FEB	2014 MAR A	APR
&M0440	Delivery of Sludge Dewatering Equipment	558	70 31/	/08/11 A	16/06/14	31/08/11 A	30/10/13	-229d	E&M0170	E&M0580	111111/11		11, 1, 1	0 50
&M0450	Delivery of Valves, Pipes & Fittings	560	90 30/	/08/11 A	26/02/14	30/08/11 A	01/01/14	-56d	E&M0180	E&M0590			Delivery of Valves, Pipes 8	& Fit
&M0460	Delivery of Penstocks	135	100 12/	/08/11 A	24/12/11 A	12/08/11 A	24/12/11 A		E&M0190	E&M0600, E&M0605		1 1		
&M0470	Delivery of Instruments	232	100 03/	/11/11 A	21/06/11 A	03/11/11 A	21/06/11 A		E&M0200	E&M0610				
&M0480	Delivery of MCC LVSB	90	100 03/	/12/12 A	04/03/13 A	03/12/12 A	04/03/13 A		E&M0210	E&M0620				
E&M0490	Delivery of BS Equipment	446	65 10/	/12/11 A	20/03/15	10/12/11 A	23/06/13	-635d	E&M0220	E&M0630				
E&M0500	Delivery FS Equipment	507		/12/11 A	11/11/15	11/12/11 A	14/08/13	-819d	E&M0230	E&M0330, E&M0640				
E&M0510	Install Membrane Modules in MBR Tank no. 4	89	100 03/		28/02/13 A	03/11/12 A	28/02/13 A		E&M0360, YSW0705	E&M0690	111111111111111111111111111111111111111			
E&M0520	Install Membrane Modules in MBR Tank No. 1 to 3	57	100 03/	700000000000000000000000000000000000000		03/12/12 A	28/02/13 A		E&M0370, YSW08302, YSW08303	E&M0690				
E&M0530	Install Grit Removal Equipment	122	100 01/		30/09/12 A	01/06/12 A	30/09/12 A		E&M0380, YSW05923	E&M0590, E&M0660		<u> </u>		
E&M0540	Install Coarse Screens	240	100 23/		23/08/13 A	23/04/12 A	23/08/13 A		E&M0390, YSW05923	E&M0660				
E&M0550	Install Fine Screens	122	100 23/	10 5 10 7 7 7	12/08/13 A	01/06/12 A	12/08/13 A		E&M0400, YSW05923	E&M0590, E&M0660				
E&M0560	Install Pumps	355		/04/12 A	04/02/14	23/04/12 A	12/05/13	-2684	E&M0410, YSW05923	E&M0660		Install Pu	mps	
	Install Submersible Mixers			1.1.1.1.1.2.1.1		15/01/13 A	12/05/13	1 66 60 61	E&M0420, YSW07204	E&M0660, E&M0690	- COUNTY	Install Submersible	Mixers	
E&M0570		163		/01/13 A	16/01/14				E&M0440, YSW06023	E&M0690	[11111]11			
E&M0580	Install Sludge Dewatering Equipment	361	3.50	/05/12 A	24/05/14	29/05/12 A	09/06/13		E&M0450, E&M0530, E&M0550,	E&M0650, E&M0690		Install Val	lves, Pipes & Fittings	
&M0590	Install Valves, Pipes & Fittings	232		/01/13 A	03/02/14	15/01/13 A	10/06/13	-2380	E&M0460, YSW07202					-,,-
E&M0600	Install Penstocks (Batch 1, GL H - T)	213	1.77	/04/12 A	21/05/13 A	23/04/12 A		0711		E&M0690			Install Instruments	ts
E&M0610	Install Instruments	74		/01/13 A	11/03/14	02/01/13 A	10/06/13	-274d	E&M0470, YSW07055, YSW0810,	-			illottall motification.	
E&M0620	Install SAT, MCC & LVSB	8	100 02/	/01/13 A	02/01/15 A	02/01/13 A			E&M0480, YSW0810	E&M0660, E&M0680	11111111			
&M0630	Install BS Equipment	180	55 02/	/01/13 A	10/04/15	02/01/13 A	14/07/13	-635d	E&M0490, YSW0810, YSW0820	E&M0690	annual I			
E&M0640	Install FS Equipment	180	50 02/	/01/13 A	11/10/15	02/01/13 A	14/07/13	-819d	E&M0500, YSW0705, YSW0810,	E&M0690	0.000		I bedeed in Trade of Dise	
E&M0650	Hydraulic Tests of Pipeworks	153	60 02/	/01/13 A	02/03/14	02/01/13 A	15/06/13	-260d	E&M0590, YSW08302	E&M0690		!!!	Hydraulic Tests of Pipe	ewor
E&M0660	Cabling Works	15	42 04/	/02/15 A	11/09/15	04/02/15 A	21/05/13	-843d	E&M0530, E&M0540, E&M0550, E&M0560, E&M0570, E&M0620	E&M0670	111111111111111111111111111111111111111			
E&M0670	Insulation Tests of Cables and Cable Termination	26	30 11/	/04/15 A	29/09/15	11/04/15 A	08/06/13	-843d	E&M0320, E&M0325, E&M0660,	E&M0690				
E&M0680	Energization	1	100 02/	/04/15 A	03/04/15 A	02/04/15 A	03/04/15 A		E&M0305, E&M0325, E&M0620,	E&M0670	1111111			
E&M0690	Functional and Performance Tests of Equipment	35	45 25/	5/03/15 A	18/10/15	25/03/15 A	27/06/13 *	-843d	E&M0510, E&M0520, E&M0570, E&M0580, E&M0590, E&M0600, E&M0605, E&M0610, E&M0630, E&M0640, E&M0650, E&M0670, YSW0380, YSW08301, YSW1530, YSW1540	E&M0700				
E&M0700	T&C Period	137	0 09/	/12/15	04/05/16	12/12/13	27/04/14	-728d	E&M0330, E&M0690	E&M0730, KD0040	1111111			
E&M0730	Trial Operation Period	413		/05/16	04/12/17	28/04/14	14/06/15		E&M0700	KD0132				
k Kwu War				700/10	01112/11	20.0 11.1			The state of the s		111111			
							and the second				111111111111111111111111111111111111111			
eliminary							00/00/40	005	FRANCICO VOMORGOS	E&M0690	111111	Install Penstocks	(Batch 2, GL A - F)	
M0605	Install Penstocks (Batch 2, GL A - F)	131		2/01/13 A	19/01/14	02/01/13 A		-2250	E&M0460, YSW08302	4607050				
(W0250	Approval of Environmental Team	16	2.75			17/05/10 A			KD0020	SKW0260	111111111111111111111111111111111111111			
W0260	Baseline monitoring (Air & Noise)	14		2/06/10 A		02/06/10 A			SKW0250	SKW0242, SKW0265, SKW0592,				
KW0265	Baseline Monitoring Submission (A & N)	14	100 16/	6/06/10 A	08/07/10 A	16/06/10 A	08/07/10 A		SKW0260	SKW0242, SKW0592, SKW0681,	111111111111111111111111111111111111111			
ction W3 - Fo	ootpath Diversion in Portion G													
ivil & Geotech	nical Works													
KW0240	Site Clearance	21	100 17/	7/05/10 A	06/06/10 A	17/05/10 A	06/06/10 A			SKW0241				
KW0241	Initial Survey	9	100 07/	7/06/10 A	15/06/10 A	07/06/10 A	15/06/10 A		SKW0240	SKW0242				
KW0242	Retaining Wall Bay 0-10 (Incl. VO. 001A)	177	100 30/	/06/10 A	23/12/10 A	30/06/10 A	23/12/10 A		SKW0241, SKW0260, SKW0265	SKW0461	111111111111111111111111111111111111111			
SKW0461	Utilities Laying and Diversion	70	100 24/	/12/10 A	03/03/11 A	24/12/10 A	03/03/11 A		SKW0242	SKW0471	111111111111111111111111111111111111111			
KW0471	Concreting for Pavement	7	100 04/	/03/11 A	10/03/11 A	04/03/11 A	10/03/11 A		SKW0461	SKW0481	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii			
KW0481	Footpath Diversion - Stage 1	14	100 11/			11/03/11 A	24/03/11 A		SKW0471	KD0050, SKW04811, SKW0491	111111111111111111111111111111111111111			
SKW04811	Excavate for FP transition at CH0-35 &CH130-141	37	100 177			25/03/11 A			SKW0481	SKW04821				
SKW04811	Construction of Drainage outfall near bay 10	3	100 23/			01/05/11 A			SKW04811	SKW04831				
SKW04821	Cable diversion by HEC	26				04/05/11 A			SKW04821	SKW04841	111111111111111111111111111111111111111			
V 11 V 11 V 12 V 17 V	·					20/05/11 A			SKW04831	SKW04851	111111111111111111111111111111111111111			
KW04841	Diversion of Ducting and Drawpit by PCCW	12			_				SKW04841	SKW04861	- 111111111			
KW04851	Soil backfilling behind FP retaining wall	14	1.00			01/06/11 A			SKW04851	SKW04871				
KW04861	Concreting for footpath pavement	7		5/06/11 A	21/06/11 A				7 30.3 V 30.40.0		1000	1 1		
KW04871	Relocation of Temp Safety Fence at SKW STW A-G	57	177		17/08/11 A		17/08/11 A		SKW04861	SKW04881	111111111111111111111111111111111111111	1 1		
KW04881	Disposal of excavation material at A-G SKW STW	138	155		02/01/12 A		02/01/12 A		SKW04871	SKW04885	111111111111111111111111111111111111111	I I I I I I I I I I I I I I I I I I I		
KW04885	Footpath Diversion - Stage 2	7	100 03/	3/01/12 A	09/01/12 A				SKW04881	SKW1261		_		
KW0491	Removal of Haul Road after SKW STW	7	0 08/	3/10/14	14/10/14	29/05/15	04/06/15	2330	KD0090, SKW0481, SKW1401	SKW0501		<u> </u>		
sh date date	05/05/10 Early bar 04/12/17 Progress bar Critical bar Summary bar Progress point Critical point Summary point				nstructio	Cont of Sewa	tract No. age Treat	DC/20 ment	Corp. Ltd. 09/13 Works at YSW & SKW rch 2014 - May 201		Date 28/02/14	Revision 0	Checked Ap	

Activity ID	Description	Original Duration	Percent Early Complete Start	Early Finish	Late Start	Late Finish	Total Predecessors	Successors	2013 NOV DEC	JAN FEB	MAR	APR
SKW0501	Concreting for no-fine concrete	14	0 08/10/14	21/10/14	29/05/15	11/06/15	233d SKW0491	SKW0511				
SKW0511	Wall Tie & Stone Facing	14	0 22/10/14	04/11/14	12/06/15	25/06/15	233d SKW0501	SKW0521				
SKW0521	Gabion Wall & Geotextile	30	0 05/11/14	04/12/14	26/06/15	25/07/15	233d SKW0511	SKW0531				
SKW0531	Installation of Flower Pot	7	0 05/12/14	11/12/14	26/07/15	01/08/15	233d SKW0521	SKW0541				
SKW0541	Completion of Outstanding Works	42	0 12/12/14	22/01/15	02/08/15	12/09/15	233d SKW0531	KD0125				
Beautiful Charles and	ope Works in Portions H & I								1010111			
Geotechnical V												
SKW0588	Construct scaffolding access	30	100 15/06/10 A	14/07/10 A	15/06/10 A	14/07/10 A	KD0020	SKW0590				
SKW0590	Site Clearance for Slope	100	100 15/07/10 A		15/07/10 A		SKW0588	SKW0591				
SKW0591	Initial Survey for Slope	28	100 21/09/10 A	18/10/10 A			SKW0590	SKW0592	(11111111111111111111111111111111111111		11 11	
SKW0592	Temporary Rockfall fence at ex. Footpath	43	100 31/08/10 A	12/10/10 A			SKW0260, SKW0265, SKW0591	SKW05931			11 11	
SKW05931	Construction of Haul Road (To +30mPD)	50	100 03/09/10 A	22/10/10 A			SKW0592	SKW05932	111111111		11 1 1	
SKW05932	Construction of Haul Road (To +42.5mPD)	68	100 23/10/10 A	29/12/10 A			SKW05931	SKW059322			11 1 1	
SKW059321	Removal of Boulders (IBG 1 - 119, SI No. 11B)	121	100 03/11/10 A	03/03/11 A	1000	T		SKW059411	111111111			
	Add. Site Invest. Works (VO. No. 9,12 &16)	174	100 03/11/10 A	03/07/11 A			SKW05932	SKW059341				
SKW059322		174	100 17/03/11 A	17/03/11 A				SKW059324				
SKW059323	Revised Profile at West Slope (+56 to +42.5mPD)	10	7.7.6				SKW059323	SKW059325				
SKW059324	Construction of Haul Road (+42.5 to +56mPD)	12		29/03/11 A			SKW059324	SKW05933				
SKW059325	Removal of Boulders (IBG 120-139, SI No. 11C)	17	100 30/03/11 A	15/04/11 A	The second second second	15/04/11 A	SKW059324 SKW059325	SKW059331	-			
SKW05933	West Slope Cutting (+56mPD to +42.5mPD)	2	100 16/04/11 A	17/04/11 A		17/04/11 A	1 20,700 7007	SKW05934	-			
SKW059331	Removal of Boulders (IBG 140-189, SI No. 11D)	45	100	01/06/11 A		01/06/11 A	SKW05933		_			
SKW05934	West Slope Cutting (+42.5mPD to +35mPD)	32	100 02/06/11 A		02/06/11 A		SKW059331	SKW059341	- !!!!!!!			
SKW059341	Revised Profile at West Slope (+20 to +4.8mPD)	1	100 04/07/11 A		04/07/11 A		SKW059322, SKW05934	SKW05935				
SKW05935	West Slope Cutting (+35mPD to +27.5mPD)	83	100 08/07/11 A		08/07/11 A		SKW059341	SKW05936	_			
SKW05936	West Slope Cutting (+27.5mPD to +20mPD)	61	100 29/09/11 A	28/11/11 A	29/09/11 A	28/11/11 A	SKW05935	SKW05937				
SKW05937	West Slope Cutting (+20mPD to +12.5mPD)	39	100 29/11/11 A	06/01/12 A	29/11/11 A	06/01/12 A	SKW05936	SKW05938				
SKW05938	West Slope Cutting (+12.5mPD to +4.8mPD)	90	100 07/01/12 A	27/03/12 A	07/01/12 A	27/03/12 A	SKW05937	KD0060, SKW1261, SKW1311,				
SKW05941	Slope Stormwater Drainage	300	100 28/03/12 A	25/05/12 A	28/03/12 A	25/05/12 A	KD0060	SKW05942				
SKW059411	East Slope Cutting (+50mPD to +42.5mPD)	72	100 04/03/11 A	14/05/11 A	04/03/11 A	14/05/11 A	SKW059321	SKW059412				
SKW059412	East Slope Cutting (+42.5mPD to +35mPD)	82	100 15/05/11 A	04/08/11 A	15/05/11 A	04/08/11 A	SKW059411	SKW059413			11 11	
SKW059413	East Slope Cutting (+35mPD to +27.5mPD)	55	100 05/08/11 A	28/09/11 A	05/08/11 A	28/09/11 A	SKW059412	SKW059414				
SKW059414	East Slope Cutting (+27.5mPD to +20mPD)	61	100 29/09/11 A	28/11/11 A	29/09/11 A	28/11/11 A	SKW059413	SKW059415				
SKW059415	East Slope Cutting (+20mPD to +12.5mPD)	39	100 29/11/11 A	06/01/12 A	29/11/11 A	06/01/12 A	SKW059414	SKW059416				
SKW059416	East Slope Cutting (+12.5mPD to +4.8mPD)	81	100 07/01/12 A	27/03/12 A	07/01/12 A	27/03/12 A	SKW059415	KD0060, SKW1311, SKW1371				
SKW05942	Slope Miscellaneous Works	61	100 26/05/12 A	31/07/12 A	26/05/12 A	31/07/12 A	SKW05941	SKW05943, SKW0595				
SKW05943	Buttress & surface Protection (SI No. 31)	60	100 03/07/12 A	31/07/12 A	03/07/12 A	31/07/12 A	SKW05942	SKW05944				
SKW05944	Slope Treatment (Sl. No. 36)	60	100 03/07/12 A		03/07/12 A	_	SKW05943	SKW05945				
SKW05945	Rock Slope Treatment (Sl. No. 68)	60	100 01/08/12 A		01/08/12 A		SKW05944	SKW05946				
SKW05946	Rock Slope Treatment (Sl. No. 98)	60	100 10/09/12 A		10/09/12 A		SKW05945	SKW05947				
SKW05947	Rock Slope Treatment (Sl. No. 115)	60	48.5		01/11/12 A		SKW05946	KD0135				
SKW05948	Soil Nailing Works (VO. No. 52)	300	100 10/02/12 A		10/02/12 A			SKW05963				
SKW0595	Rock Meshing	60	0 31/12/13	28/02/14	07/08/15	05/10/15	584d SKW05942, SKW05972	KD0165		Ro	ock Meshing	
SKW05963	Determine Alignment & Foundation Design of RFB	120			10/02/12 A		SKW05948	SKW059631, SKW05964,				
SKW059631	GEO Approval of Foundation Design	70			09/06/12 A		SKW05963	SKW05968				
SKW059631 SKW05964	Fabrication & Shipping of RFB Material	180		14 -1 17 6 9 9 9 6 9	09/06/12 A	_	SKW05963	SKW05972	1111			
		62		TV 3-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	09/06/12 A		SKW05963	SKW05967				
SKW05965	Site clearance & Formation of access						SKW05965	SKW05968				
SKW05967	Plant mobilization	14			02/01/13 A		SKW05963 SKW059631, SKW05967	SKW05969				
SKW05968	Construction of anchors & pull out test	180		ALL CONTRACTOR	16/01/13 A		SKW05968	SKW05970				
SKW05969	Construction of Foundation	120			11/07/13 A		100000000000000000000000000000000000000	SKW05970 SKW05971				
SKW05970	Proof Load Test	60			31/07/13 A		SKW05969	SKW05971 SKW05972	ope crest)			
SKW05971	Transportation of Material (To the slope crest)	30			31/07/13 A		SKW05970					
SKW05972	Installation of Flexible barrier	90	100 31/07/13 A	28/10/13 A	31/07/13 A	28/10/13 A	SKW05964, SKW05971	KD0165, SKW0595	stallation of Flexible barrier			
ection W5 - P.	S. No. 1 in Portion D											
'SW16605	Construct UU & pipes along sea side (Grid D-Q)	60	80 20/11/13 A	11/01/14	20/11/13 A	29/01/14	18d YSW16604	YSW16702, YSW1700		Construct UU & pipes along s	ea side (Grid D-Q)	
Civil & Geotech												
SKW0651	Site Clearance	7	100 17/05/10 A	23/05/10 A	17/05/10 A	23/05/10 A	KD0020	SKW0652	LI			
ish date ta date	05/05/10 04/12/17 31/12/13 28/03/14 7A Systems, Inc. Early bar Progress bar Critical bar Summary bar Progress point Critical point Summary point Start milestone point			nstructio	Con on of Sew	tract No. age Treat	eering Corp. Ltd. DC/2009/13 ment Works at YSW & SKW e (March 2014 - May 201		Date 28/02/14	Revision 0		Appro//C





Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2013 NOV DEC	JAN FEB	2014 MAR	APR
KW1441	Sewer of Connection Pit to Outfall VO45	177	85	05/06/13 A	30/01/14	05/06/13 A	03/06/14	124d	SKW1221, SKW1440	E&M3359, KD0090			nection Pit to Outfall V	
KW STW														
Submission &	& Delivery (E&M)				1000	-				T-0110/T0		i i		1
E&M3010	Delivery of MBR M.M 1st shipment for Temp STP	150	100	24/02/11 A	17/10/11 A	24/02/11 A	17/10/11 A		E&M0160	E&M3170				
E&M3030	Delivery of Grit Removal Equipment	180		10/10/11 A		17779777	29/12/11 A		E&M0150	E&M3190			<u>-</u>	i
E&M3060	Delivery of Fine Screens	136	100	12/09/11 A	-		30/11/11 A		E&M0120	E&M3210			1	1
E&M3070	Delivery of Pumps	136	7 (410)	23/06/11 A			05/09/11 A		E&M0130	E&M3220				1
E&M3080	Delivery of Submersible Mixers	180		26/07/11 A	F. F. C.		17/11/11 A		E&M0140	E&M3230		-1	Delivery of Sludg	e Dewaterir
E&M3090	Delivery of Sludge Dewatering Equipment	210		01/09/11 A	03/03/14	14477.01.01.01.01.01	11/01/14	18/2/5	E&M0170	E&M3240		1 11	Delivery of Valves, Pip	1
E&M3100	Delivery of Valves, Pipes & Fittings	180		30/08/11 A	22/02/14		19/11/13	-95d	E&M0180	E&M3250 E&M3260		1 11		
E&M3110	Delivery of Penstocks	180		12/08/11 A	24/12/11 A		24/12/11 A		E&M0190 E&M0200	E&M3270			ii	İ
E&M3130	Delivery of instruments	180	200	21/06/11 A	03/11/11 A		03/11/11 A	070-1		E&M3261			11	
E&M3140	Delivery of MCC LVSB	180		01/01/14	30/06/14	07/04/13	03/10/13		E&M0210	E&M3291				
E&M3150	Delivery of BS Equipment	180		03/07/12 A	20/07/14		04/12/13		E&M0220	E&M0340, E&M3300				
E&M3160	Delivery of FS Equipment	180	5	30/06/12 A	06/08/14	30/06/12 A	23/12/13	-226d	E&M0230	E&W0340, E&W3300				
Construction					1	T			SKW04885, SKW05938	SKW1271, SKW1371		1 11		į
SKW1261	Excavate for SKW STW Structure (Grid A -G)	164	100	28/03/12 A	10.000	28/03/12 A			CAST PRODUCT AND ADDRESS.	SKW1281				į
SKW1271	55 M3 Fire Sprinkle Water Tank (FL +0.9 mPD)	36		03/07/12 A		03/07/12 A	2 5 AV 5 AV 5 AV 5	-	SKW1261	SKW1291	-		ii	
SKW1281	Ground Floor Slab (Grid A-G)	46		03/07/12 A	31/07/12 A				SKW1271	KD0090, SKW1301				
SKW1291	Columns & Walls to 1/F & 1/F Slab (Grid A-G)	50		03/07/12 A	31/07/12 A		CARLES AND DESCRIPTION		SKW1281	E&M3261, E&M3291, E&M3311,				- 1
SKW1301	Columns & Walls to R/F & R/F Slab (Grid A-G)	50		01/09/12 A	31/01/13 A			004.1	SKW1291	E&M3261, E&M3291, E&M3311,		ABWF W	orks	******
SKW1411	ABWF Works	105	65	01/02/13 A	05/02/14	01/02/13 A	19/06/13	-231d	SKW1301	EXIVIDED 1, EXIVIDED 1, EXIVIDED 11,				
Construction					1	1		-	OKANOEOOO OKANOEOAAC	SKW1321, SKW1371				
SKW1311	Excavate for SKW STW Structure (Grid G-N)	90	100	28/03/12 A	25/06/12 A	28/03/12 A			SKW05938, SKW059416		_			
SKW1321	Equalization Tank no.1 & 2 with base slabs (-2.1	42	100	26/06/12 A	30/09/12 A	26/06/12 A	30/09/12 A		SKW1311	SKW1331	_			
SKW1331	Columns & Walls from B/S to G/F Slab (Grid G-N)	35	100	01/09/12 A	30/09/12 A	01/09/12 A	30/09/12 A		SKW1321	SKW1341				
SKW1341	Ground Floor Slab (Grid G-N)	35	100	01/09/12 A	17/12/12 A	01/09/12 A	17/12/12 A		SKW1331	SKW1351				
SKW1351	Columns & Walls to 1/F & 1/F Slab (Grid G-N)	28	100	01/11/12 A	15/01/13 A	01/11/12 A	15/01/13 A		SKW1341	SKW1361				1
SKW1361	Columns & Walls to R/F & R/F Slab (Grid G-N)	35	100	01/11/12 A	03/08/13 A	01/11/12 A	03/08/13 A		SKW1351	SKW1451		ABWF Works		1
SKW1451	ABWF Works	54	65	05/06/13 A	18/01/14	05/06/13 A	17/05/13	-246d	SKW1361	E&M3170, E&M3190, E&M3210, E&M3291, E&M3300, SKW1391,		ABVVF VVOIKS	 	
													111	
Construction		1 07	400	00/07/40 A	05/04/40 4	00/07/40 4	05/04/40 A		SKW05938, SKW059416, SKW1261,	SKW1381				1
SKW1371	Excavate for SKW STW Structure (Grid N-T)	97	115.73	03/07/12 A	200000000000000000000000000000000000000	03/07/12 A				1 2017 20	_			1
SKW1381	Ground Floor Slabs include MBR Tank (Grid N-T)	58	1100	02/10/12 A		02/10/12 A			SKW1371	SKW1391			111	1
SKW1391	Columns & Walls to 1/F & 1/F Slab (Grid N-T)	35		31/05/13 A		31/05/13 A			SKW1381, SKW1451	SKW1401	R/F Slab (Grid N-T)			1 1
SKW1401	Columns & Walls to R/F & R/F Slab (Grid N-T)	35		03/07/13 A	15/09/13 A				SKW1391	E&M3240, SKW0491, SKW1421 E&M3240, SKW1551	(R/F Slab (Glid 14-1)		BWF Works	1
SKW1421	ABWF Works	60		06/08/13 A	20/02/14	06/08/13 A			SKW1401	SKW1561			11	ainage (SS
SKW1551	Drainage (SSMH1-SSMH7)	35	0	20/02/14	27/03/14	20/06/13	24/07/13	-246d	SKW1411, SKW1421, SKW1451	3KW 1301				
												())	Ţ.	İ
SKW1561	Sewer (SMFH1-SMFH2, SMFH3-SMFH7)	220	0	27/03/14	02/11/14	25/07/13	01/03/14	, per 20 5 40	SKW1551	SKW1571		i ii		1
SKW1571	Roadwork & Drainage Channel (SKW)	220	0	02/11/14	10/06/15	02/03/14	07/10/14	-246d	SKW1561	KD0090		1 11		
KW STW - E	E&M Works													
&M3170	Install Membrane Modules in MBR Tank No. 1 to 2	100	0	18/01/14	28/04/14	07/01/14	16/04/14		E&M3010, SKW1451	E&M3311		1 1-1-		
&M3190	Install Grit Removal Equipment	60		19/03/14	18/05/14	21/09/13	19/11/13		E&M3030, E&M3210, SKW1451	E&M3250, E&M3320				Fine Scree
&M3210	Install Fine Screens	60	0	18/01/14	19/03/14	24/05/13	22/07/13	-240d	E&M3060, SKW1451	E&M3190, E&M3220, E&M3250, E&M3260, E&M3320		1	Install I	
				10/22:::	0010=11	00.10=11-	05/16/15	0.1-	E9M2070 E9M2240	E&M3230, E&M3250, E&M3260,				The second
&M3220	Install Pumps	75		19/03/14	02/06/14	23/07/13	05/10/13		E&M3070, E&M3210 E&M3080, E&M3220	E&M3250, E&M3260, E&M3311,				
&M3230	Install Submersible Mixers	45		02/06/14	17/07/14	06/10/13	19/11/13			E&M3250, E&M3260, E&M3311,				
&M3240	Install Sludge Dewatering Equipment	74		04/03/14	16/05/14	12/01/14	26/03/14		E&M3090, SKW1401, SKW1421	E&M3320 E&M3270, E&M3291, E&M3300,		1		
&M3250	Install Valves, Pipes & Fittings	75	0	17/07/14	30/09/14	20/11/13	02/02/14	-240d	E&M3100, E&M3190, E&M3210, E&M3220, E&M3230	E&M3310			111	
&M3260	Install Penstocks	135	10	05/03/14 A	16/11/14	05/03/14 A	16/04/14	-213d	E&M3110, E&M3210, E&M3220,	E&M3311			111	
&M3261	Install Penstocks Install SAT of MCC & LVSB	174		30/06/14	21/12/14	04/10/13	26/03/14		E&M3140, SKW1301, SKW1411	E&M3311, E&M3320				1
&M3270	Install instruments	60		30/09/14	29/11/14	16/02/14	16/04/14		E&M3130, E&M3250	E&M3311				
&M3291	Install BS Equipment	180		01/08/14	28/01/15	05/12/13	02/06/14		E&M3150, E&M3250, SKW1301,	E&M3331, E&M3359				
Ø1VI329 I	Install BS Equipment	160	U	01/00/14	20/01/10	00/12/10	02/00/14	2400	SKW1411, SKW1451					1
t date sh date a date date e number	05/05/10 04/12/17 31/12/13 28/03/14 10A Early bar Progress bar Critical bar Summary bar Progress point Critical point Summary point				nstructio	Con n of Sew	tract No. I age Treat	DC/20 ment	Corp. Ltd. 09/13 Works at YSW & SKW ch 2014 - May 201		Date 28/02/14	Revision 0	Checked RH	Appro VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Predecessors	Successors	NOV	2013 DEC	JAN	2014 FEB MAR	APR
E&M3300	Install FS Equipment	161	0	06/08/14	14/01/15	24/12/13	02/06/14	-226d E&M3160, E&M3250, SKW1451	E&M3331, E&M3359					i
E&M3310	Hydraulic Tests of Pipeworks	90	0	30/09/14	29/12/14	06/03/14	03/06/14	-209d E&M3250	E&M3359					!
E&M3311	Cabling Works	47	0	21/12/14	06/02/15	17/04/14	02/06/14	-249d E&M3170, E&M3230, E&M3260, E&M3261, E&M3270, SKW1301,	E&M3331, E&M3359					
E&M3320	Cabling Works for Dewatering Equipment	47	0	21/12/14	06/02/15	27/03/14	12/05/14	-270d E&M3190, E&M3210, E&M3220, E&M3230, E&M3240, E&M3261	E&M3321					
E&M3321	Insulation Tests of Cables and Cable Termination	21	0	06/02/15	27/02/15	13/05/14	02/06/14	-270d E&M3320	E&M3331					
E&M3331	Energization	1	0	27/02/15	28/02/15	03/06/14	03/06/14	-270d E&M3291, E&M3300, E&M3311,	E&M3359					
E&M3359	Functional and Performance Tests of Equipment	35	0	28/02/15	04/04/15	04/06/14	08/07/14	-270d E&M3291, E&M3300, E&M3310, E&M3311, E&M3331, SKW1241,	E&M3360					
E&M3360	T&C Period	91	0	04/04/15	04/07/15	09/07/14	07/10/14	-270d E&M0340, E&M3359, SKW0722, SKW15112	E&M3370, KD0090					
E&M3370	Trial Operation Period	456	0	04/07/15	15/12/16	12/03/16	04/12/17	252d E&M3360						
Rising Main												1		
SKW1481	Subm, Approval & Delivery of DI pipes	120	100	17/05/10 A	13/09/10 A	17/05/10 A	13/09/10 A	KD0020	SKW1501					
SKW1501	LCS (ChB0+00 - ChB1+20)	300	100	14/09/10 A	10/07/11 A	14/09/10 A	10/07/11 A	PRE0100, SKW1481	SKW1521					
SKW1521	Twin DN150 DI Rising Main (ChB0+00 - ChA4+55)	250	90	11/07/11 A	24/01/14	11/07/11 A	07/10/14	256d SKW1501	KD0090			Tv	win DN150 DI Rising Main (Ch	B0+00 - ChA4+55)
Section W8 - L	andscape Softworks in All Portions													
SKW1591	Tree Survey	21	100	17/05/10 A	06/06/10 A	17/05/10 A	06/06/10 A	KD0020	SKW1621			1		
SKW1611	Preservation & Protection of Trees	1053	99	17/05/10 A	10/01/14	17/05/10 A	03/04/13	-282d KD0020	KD0100, SKW1631		1.46-3.7	Preservati	ion & Protection of Trees	
SKW1621	Transplantation at SKW	90	100	07/06/10 A	04/09/10 A	07/06/10 A	04/09/10 A	SKW1591	KD0100					
Section W9 - E	stablishment Works in All Portions			1										
SKW1631	Section W9 - Establishment Works	365	0	10/01/14	10/01/15	04/04/13	03/04/14	-282d SKW1611	KD0110					

Start date	05/05/10	Early bar
Finish date	04/12/17	Progress bar Critical bar
Data date	31/12/13	Summary bar
Run date	28/03/14	▲ Progress point
Page number	11A	▼ Critical point□ Summary point
c Primavera	Systems, Inc.	Start milestone point
		Finish milestone point

Leader Civil Engineering Corp. Ltd.
Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & SKW
3-month Rolling Programme (March 2014 - May 201

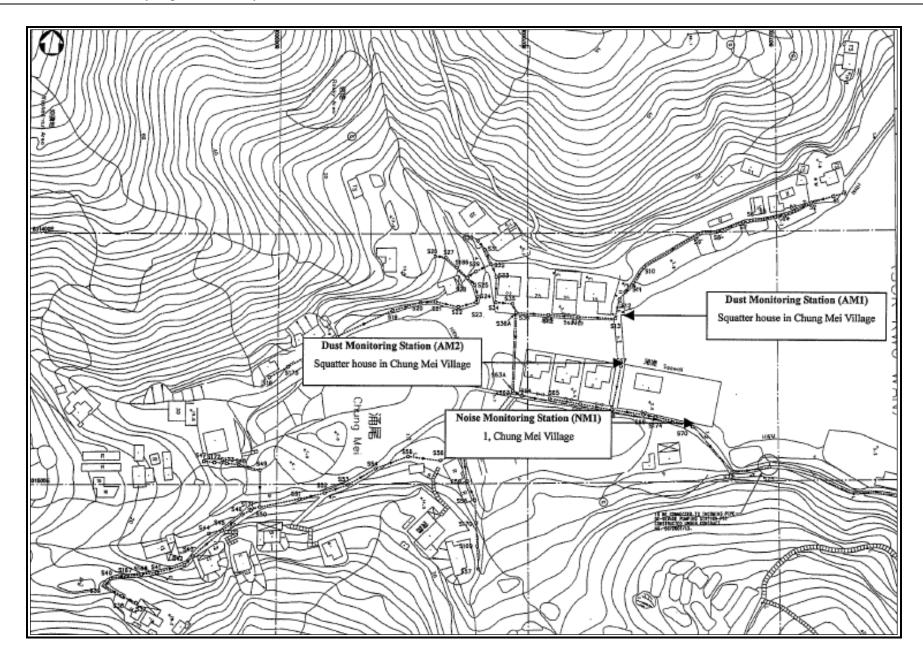
Date	Revision	Checked	Approved
28/02/14	Revision 0	RH	VC



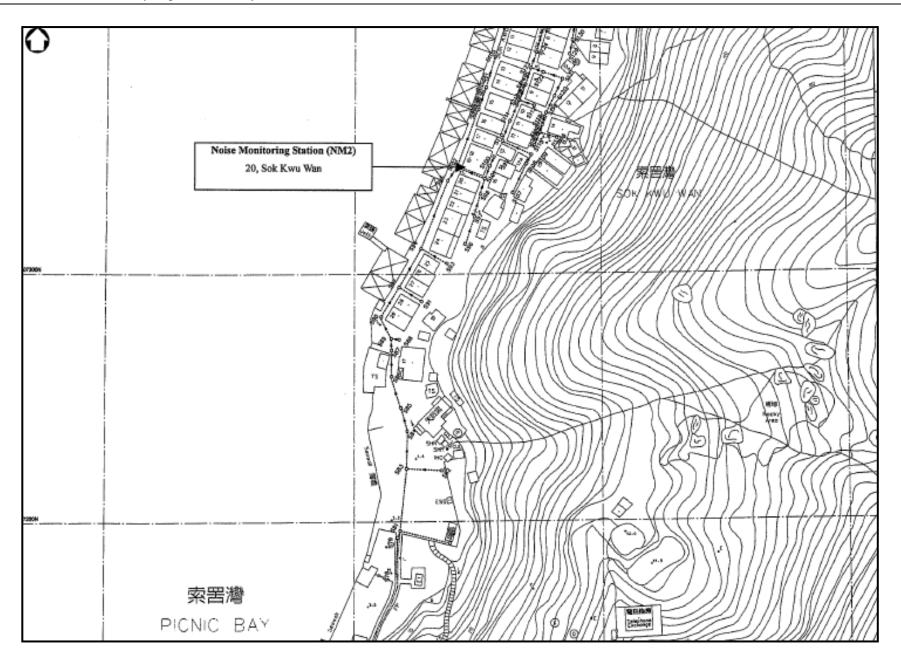
Appendix D

Location of Monitoring Stations
(Air Quality / Construction Noise / Water Quality)

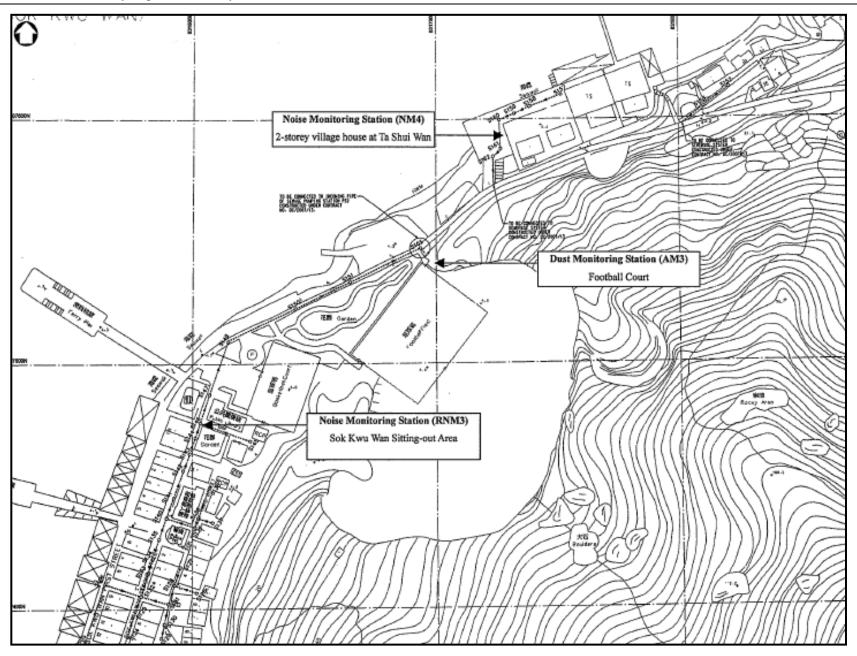




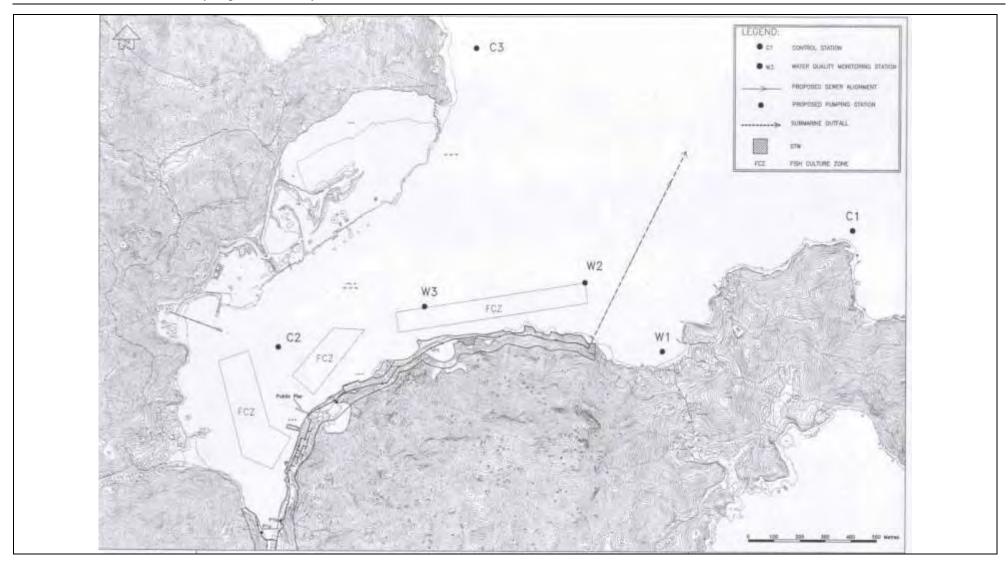












Appendix E

Monitoring Equipments Calibration Certificate



Equipment Calibrated:

Type: Laser Dust monitor

Manufacturer: Sibata LD-3B

Serial No. 2X6145

Equipment Ref: EQ105

Sensitivity 594 CPM

Standard Equipment:

Standard Equipment: Higher Volume Sampler

Location & Location ID: AUES office (calibration room)

Equipment Ref: HVS 018

Last Calibration Date: 8 October 2013

Equipment Calibration Results:

Calibration Date: 22 & 23 October 2013

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
3hr38min	15:35 ~ 19:13	25.1	1015.6	0.080	8011	36.8
14hr48min	19:20 ~ 10:08	25.1	1015.6	0.097	40585	45.7
6hr38min	10:15 ~ 16:53	24.6	1014.5	0.100	17662	44.3

Sensitivity Adjustment Scale Setting (Before Calibration) 590 (CPM)

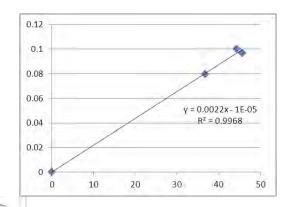
Sensitivity Adjustment Scale Setting (After Calibration) 597 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9968

Validity of Calibration Record 11 Nov 2013



Operator : Tung Chi Sun Signature : Date : 11 November 2013

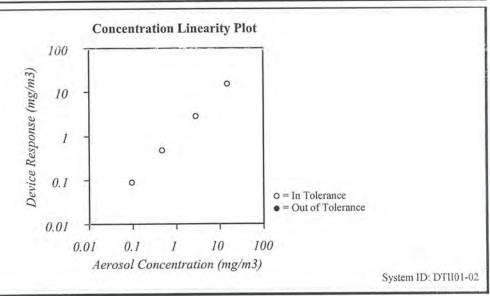
QC Reviewer : Ben Tam Signature : Date : 11 November 2013



TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Condition			Model	8520	
Temperature	74.7 (23.7)	°F (°C)	Model	0020	
Relative Humidity	27	%RH	Serial Number	21060	
Barometric Pressure	28.97 (981.0)	inHg (hPa)	Serial Number	21000	

☑ In Tolerance ⊠As Left Out of Tolerance ☐ As Found



Date

Zero Stability Results		Y	
Average: W :mg/	m³ Ow	:mg/m³ Maximum:	2.07 :mg/m ³ = 2.07 :hrs

TSI incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable Temperature DC Voltage Photometer	System ID	Last Cal.	Cal. Due
Barometric Pressure	E003733	03-12-13	03-12-14		E002873	11-08-12	11-08-13
Humidity	E002873	11-08-12	11-08-13		E003314	01-02-13	01-02-14
DC Voltage	E003315	01-02-13	01-02-14		E003319	08-14-13	02-14-14
DC Voltage Microbalance Flowmeter	E003315 M001324 E002006	01-02-13 01-04-13 03-05-13	01-02-14 01-04-15 03-05-14	Photometer Pressure	E003511	11-07-12	11-07-13

Final Function October 22, 2013 Check Calibrated



TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Condition	SSANARISH YAR YEROOD OO ALAAN AAAAA AAAAA AAAAA AAAAA			Model	ΔM510
Temperature	69 1 (20.6)	°F (°C)	-	17 4 27 4 4 1 2	ratero ro
Relative Hunndity	-16	%RH		Serial Number	11008017
Baromeune Pressure	29,07 (984.4)	inHg (hPa)		i octationnoci	

Start Start

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in struct accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nonmally adjusted to respirable mass of standard ISO 12103-1. All test dust (Arizona dust). Our calibration ratio is greater than 1.2-1.

Measurement Manable Barometric Pressure Hamiday DC Voltage Microbalance Flowmeter	F003733 E002873 E003315 M001324 E002006	1 ast Cal 03-12-13 11-08-12 01-02-13 01-04-13 03-05-13	Cal Due 03-12-14 11-08-13 01-02-14 01-04-15 03-05-14	TRANSI - AND AND RESIDENCE SERVICE AND AND AND AND AND AND AND AND AND AND	Measurement Variable Temperature DC Voltage Photometer Pressure	System JD E002873 E003314 E003319 E003511	Lest Cal 11-08-12 01-02-13 02-19-13 11-07-12	(fall Doc 11-08-13 01-02-14 08-19-13 11-07-13
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AMMA NATIONAL Calibrated

Final Function Check

June 18, 2013

System ID, DTI101-02

Date



TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

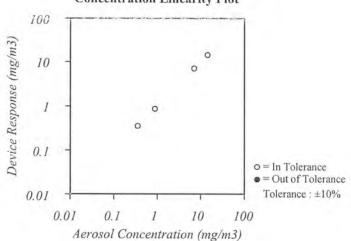
Environment Condition		
Temperature	73.2 (22.9)	°F (°C)
Relative Humidity	44	%RH
Barometric Pressure	28.94 (980.0)	inHg (hPa)

Model	AM510
Serial Number	11008018

 ☑ As Left
 ☑ In Tolerance

 ☐ As Found
 ☐ Out of Tolerance





System ID: DTII01-02

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1

Measurement Variable Barometric Pressure	System ID E003733	Last Cal. 03-12-13	Cal. Due 03-12-14	Measurement Variable Temperature	System 1D E002873	Last Cal. 11-08-12	Cal. Due 11-08-13
Humidity	E002873	11-08-12	11-08-13	ii DC Voltage	E003314	01-02-13	01-02-14
DC Voltage	E003315	01-02-13	01-02-14	Photometer	E003319	02-19-13	08-19-13
Microbalance	M001324	01-04-13	01-04-15	Pressure	E003511	11-07-12	11-07-13
Flowmeter	E002006	03-05-13	03-05-14				20.31

Amanda Shao

Final Function Check

July 25, 2013

Date



Equipment Calibrated:

Type: Laser Dust monitor

Manufacturer: Sibata LD-3B

Serial No. 2X6146

Equipment Ref: EQ106

Sensitivity 582 CPM

Standard Equipment:

Standard Equipment: Higher Volume Sampler

Location & Location ID: AUES office (calibration room)

Equipment Ref: HVS 018

Last Calibration Date: 8 October 2013

Equipment Calibration Results:

Calibration Date: 22 & 23 October 2013

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
3hr38min	15:35 ~ 19:13	25.1	1015.6	0.080	7608	34.9
14hr48min	19:20 ~ 10:08	25.1	1015.6	0.097	40112	45.2
6hr38min	10:15 ~ 16:53	24.6	1014.5	0.100	17201	43.2

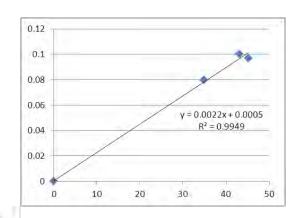
Sensitivity Adjustment Scale Setting (Before Calibration) 589 (CPM)
Sensitivity Adjustment Scale Setting (After Calibration) 593 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9949

Validity of Calibration Record ______11 Nov 2013



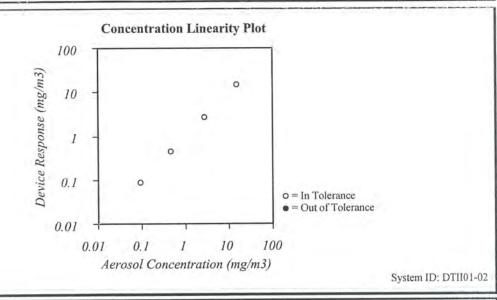
Operator : Tung Chi Sun Signature : Date : 11 November 2013

QC Reviewer : Ben Tam Signature : Date : 11 November 2013



TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Condition			Model	8520	
Temperature	74.8 (23.8)	°F (°C)	Model	0020	
Relative Humidity	27	%RH	Serial Number	23080	
Barometric Pressure	28.96 (980.7)	inHg (hPa)	Serial Number		



Zero Stability Results	3						
Average:		Minimum:		Maximum:		Time:	
0.000	:mg/m ³	0.000	$:mg/m^3$	0.001	:mg/m ³	17:00	:hrs.

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1

Measurement Variable Barometric Pressure Humidity DC Voltage Microbalance Flowmeter	System ID E003733 E002873 E003315 M001324 E002006	Last Cal. 03-12-13 11-08-12 01-02-13 01-04-13 03-05-13	Cal. Due 03-12-14 11-08-13 01-02-14 01-04-15 03-05-14	Measurement Variable Temperature DC Voltage Photometer Pressure	System ID E002873 E003314 E003319 E003511	Last Cal. 11-08-12 01-02-13 08-14-13 11-07-12	Cal. Due 11-08-13 01-02-14 02-14-14 11-07-13
--	--	---	--	---	---	---	--

Calibrated

Final Function Check

October 22, 2013

Date



SIBATA SCIENTIFIC TECHNOLOGY LTD.

1-1-62, Nakane, Soka, Saitama, 340-0005 Japan

TEL: 048-933-1582 FAX: 048-933-1591

CALIBRATION CERTIFICATE

Date: June 20, 2013

Equipment Name : Laser Dust Monitor, Model LD-3B

Code No. : 080000-42

Quantity : 1 unit
Serial No. : 366418

Sensitivity : 0.001 mg/m3

Sensitivity Adjustment : 664 CPM

Scale Setting : June 17, 2013

We hereby certify that the avobe mentioned instrment has been calibrated satisfactory.

Sincerely

SIBATA SCIENTIFIC TECHNOLOGY LTD.

Kentaro Togo

Overseas Sales Division



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C132229

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC13-0878)

Description / 儀器名稱 :

Precision Integrating Sound Level Meter (EQ012)

Manufacturer/製造商 Model No. / 型號

Rion NL-14

Serial No./編號

10303225

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 :

 $(55 \pm 20)\%$

Line Voltage / 電壓 :

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 April 2013

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

All results are within manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試

Certified By 核證

Lee

K M Wu

Date of Issue 簽發日期

16 April 2013

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

本證書所載校正用之測試器材均可溯源至國際標準。局部被印本證書需先獲本實驗所書而批准。



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C132229

證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration was performed before the test.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment:

Equipment ID

Description

Certificate No.

CL280 CL281 40 MHz Arbitrary Waveform Generator

C130019

Multifunction Acoustic Calibrator

DC110233

- Test procedure: MA101N.
- 6. Results:
- 6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting			Applied Value		UUT	IEC 60651	
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Type 1 Spec. (dB)
40 - 100	Lp	A	Fast	94.00	1	93.8	± 0.7

6.1.2 Linearity

Tel 混結: 2927 2606 Fax/例页: 2744 8986

	UUT Setting				d Value	UUT	
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	
60 - 120	L_{P}	A	Fast	94.00	1	93.7 (Ref.)	
17.00				104.00		103.7	
				114.00		113.8	

IEC 60651 Type 1 Spec. : \pm 0.4 dB per 10 dB step and \pm 0.7 dB for overall different.

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Website/1941: www.suncreation.com

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E-mail/電郵: callab@suncreation.com



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Certificate of Calibration 校正證書

Certificate No. : C132229

證書編號

6.2 Time Weighting

Continuous Signal 6.2.1

	UUT Setting			Applied Value		UUT	IEC 60651
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Type 1 Spec. (dB)
40 - 100 L _P	A	Fast	94.00	1	93.8	Ref.	
720	11.7		Slow			93.8	± 0.1
		1	Imp			93.8	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

	UUT Setting			Applied Value		UUT	IEC 60651	
Range (dB)	Mose	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration	Reading (dB)	Type 1 Spec. (dB)	
50 - 110	Lp	A	Fast	106.0	Continuous	106.0	Ref.	
	L _{Amax}				200 ms	105.2	-1.0 ± 1.0	
	Lp		Slow		Continuous	106.0	Ref.	
	L _{Amax}		4		500 ms	102.1	-4.1 ± 1.0	

6.3 Frequency Weighting

6.3.1 A-Weighting

	UUT	Setting		Appl	ied Value	UUT	IEC 60651
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Type 1 Spec. (dB)
40 - 100	40 - 100 L _P	A	Fast	94.00	31.5 Hz	54.4	-39.4 ± 1.5
				63 Hz	67.7	-26.2 ± 1.5	
		1		125 Hz	77.8	-16.1 ± 1.0	
				250 Hz	85.3	-8.6 ± 1.0	
					500 Hz	90.6	-3.2 ± 1.0
					1 kHz	93.8	Ref.
		1			2 kHz	95.0	$+1.2 \pm 1.0$
		1			4 kHz	94.7	$+1.0 \pm 1.0$
				8 kHz	92.5	-1.1 (+1.5; -3.0)	
					12.5 kHz	89.3	-4.3 (+3.0; -6.0)

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C-Weighting 6.3.2

	UUT	Setting		Appl	ied Value	UUT	IEC 60651
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Type 1 Spec. (dB)
40 - 100	Lp	C	Fast	94.00	31.5 Hz	90.8	-3.0 ± 1.5
		100			63 Hz	93.0	-0.8 ± 1.5
				125 Hz	93.7	-0.2 ± 1.0	
					250 Hz	93.9	0.0 ± 1.0
					500 Hz	93.9	0.0 ± 1.0
					1 kHz	93.9	Ref.
			8		2 kHz	93.7	-0.2 ± 1.0
					4 kHz	93.0	-0.8 ± 1.0
				8 kHz	90.7	-3.0 (+1.5; -3.0)	
				12.5 kHz	87.5	-6.2 (+3.0; -6.0)	

6.4 Time Averaging

	UU	T Setting			Applied Value				UUT	IEC 60804
Range (dB)	Mode	Frequency Weighting	Time Weighting	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
50 - 110	LAcq	A	10 sec.	4	1	1/10	110.0	100	99.8	± 0.5
-		1			1	1/102		90	89.6	± 0.5
			60 sec.			1/103		80	79.3	±1.0
			5 min.			1/104		70	70.0	± 1.0

Remarks: - UUT Microphone Model No.: UC-53A & S/N: 319944

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

94 dB : 31.5 Hz - 125 Hz : ± 0.35 dB - Uncertainties of Applied Value :

250 Hz - 500 Hz : ± 0.30 dB 1 kHz : ± 0.20 dB 2 kHz - 4 kHz : ± 0.35 dB 8 kHz : ± 0.45 dB

12.5 kHz : ± 0.70 dB

104 dB: 1 kHz $\pm 0.10 \text{ dB (Ref. 94 dB)}$ 114 dB: 1 kHz $: \pm 0.10 \, dB \, (Ref. 94 \, dB)$: ± 0.2 dB (Ref. 110 dB Burst equivalent level continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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Sun Creation Engineering Limited - Calibration & Testing Laboratory c/o, 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

創創工程有限公司 - 核正及檢測實驗所 vo 香港新界屯門與安里一號青山灣機機四棵

Tel/ En5: 2927 2606 Fax/傳真: 2744-8986



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C132228

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC13-0878)

Description / 儀器名稱 : Acoustical Calibrator (EQ081)

Manufacturer/製造商 : Brüel & Kjær

Model No. / 型號 : 4231 Serial No. / 編號 : 2326408

Supplied By / 委託者 : Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 April 2013

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

All results are within manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

- Agilent Technologies, USA

Tested By 測試

Certified By 核證 K C Lee

K M Wu

Date of Issue 簽發日期 16 April 2013

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C132228

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment:

Equipment ID CL130 CL281 TST150A DescriptionCertificate No.Universal CounterC123541Multifunction Acoustic CalibratorDC110233Measuring AmplifierC120886

4. Test procedure : MA100N.

5. Results:

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value (Hz)
(kHz)	(kHz)	Spec.	
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark: The uncertainties are for a confidence probability of not less than 95 %.

Note:

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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Appendix F

Event/Action Plan



Air Quality

		All Quality		
EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
Exceedance for one sample	Identify source, investigate the causes of exceedance and propose remedial measures; Inform IC(E) and ER; Repeat measurement to confirm finding; Increase monitoring frequency to daily.	Check monitoring data submitted by ET; Check Contractor's working method.	Notify Contractor.	Rectify any unacceptable practice; Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	 Identify source; Inform IC(E) and ER; Advise the ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IC(E) and Contractor on remedial actions required; If exceedance continues, arrange meeting with IC(E) and ER; If exceedance stops, cease additional monitoring. 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented. 	 Submit proposals for remedial to ER within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
		LIMIT LEVEL		
Exceedance for one sample	 Identify source, investigate the causes of exceedance and propose remedial measures; Inform ER, Contractor and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results. 	Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures.	Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented.	Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IC(E) within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1. Notify IC(E), ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures.	Confirm receipt of notification of failure in writing; Notify Contractor; In consolidation with the IC(E), agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IC(E) within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the ER until the exceedance is abated.



Construction Noise

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action Level	 Notify IC(E) and Contractor; Carry out investigation; Report the results of investigation to the IC(E), ER and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness 	 Review the analysed results submitted by the ET; Review the proposed remedial measures by the Contractor and advise the ER accordingly; Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures are properly implemented. 	 Submit noise mitigation proposals to IC(E); Implement noise mitigation proposals.
Limit Level	 Identify source; Inform IC(E), ER, EPD and Contractor; Repeat measurements to confirm findings; Increase monitoring frequency; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Inform IC(E), ER and EPD the causes and actions taken for the exceedances; Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results; If exceedance stops, cease additional monitoring. 	Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures.	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.



Water Quality

EVENT ACTION							
EVENT	rom.			COMEDICEOR			
A COMPANY A PRIMA	ET	IC(E)	ER	CONTRACTOR			
ACTION LEVEL							
Exceedance for one sampling day	 Repeat in-situ measurement on the next day of exceedance to confirm findings; Identify source(s) of impact; Inform ICE, Contractor, ER, EPD and AFCD; and Check monitoring data, all plant, equipment and Contractor's working methods. 	Check monitoring data submitted by ET and Contractor's working methods	Confirm receipt of notification of non-compliance in writing; and Notify Contractor	 Information the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; and Amend working methods if appropriate 			
2. Exceedance for two or	1. Same as the above;	1. Same as the above;	1. Discuss with IC(E) on the	1. Same as the above;			
more consecutive sampling days	 Inform ICE, Contractor, ER, EPD and AFCD; Discuss mitigation measures with IC(E), RE and Contractor; Ensure well implementation of mitigation 	Discuss with ET and Contractor on possible remedial actions; Review the proposed mitigation measures submitted	proposed mitigation measures; 2. Ensure well implementation of mitigation measures; and 3. Assess the effectiveness of the implemented mitigation	 Check all plant and equipment and consider changes of working methods; Submit proposal of additional mitigation measures to ER within 3 			
	measures; and 5. Increase the monitoring frequency to daily until no exceedance of Action Level	by Contractor and advise the ER accordingly; and 4. Supervise the implementation of mitigation measures.	measures	working days of notification and discuss with ET, IC(E), and ER; and 4. Implement the agreed mitigation measures			
		LIMIT LEVEL					
Exceedance for one sampling day	 Repeat in-situ measurement on the next day of exceedance to confirm findings; Identify source(s) of impact; Inform ICE, Contractor, ER, EPD and AFCD; Check monitoring data, all plant, equipment and Contractor's working methods; and Discuss mitigation measures with IC(E), RE and Contractor 	Check monitoring data submitted by ET and Contractor's working method Discuss with ER and Contractor on possible remedial actions; and Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly	 Confirm receipt of notification failure in writing; and Discuss with IC(E), ET and Contractor on the proposed mitigation measures; and Request Contractor to review the working methods 	notification of the failure in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; and 4. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET and ER			
Exceedance for two or more consecutive sampling days	 Same as the above; Ensure mitigation measures are implemented; and Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days 	 Same as the above; and Supervise the Implementation of mitigation measures 	Same as the above; Ensure well implementation of mitigation measures Make agreement on the mitigation measures to be implemented; and Consider and instruct, if necessary, the Contractor to stow down or to stop all or part of the construction activities until no exceedance of limit level	further exceedance; 3. Implement the agreed mitigation measures; 4. Resubmit proposals of mitigation measures if problem still not under control; and			



Appendix G

Impact Monitoring Schedule



Impact Monitoring Schedule for the Reporting Period

	Date	Air G	Quality	Noise	Water Quality
		1-hour TSP	24-hour TSP	Leq (30min)	
Wed	26-February-14				✓
Thu	27-February-14		✓		
Fri	28-February-14				
Sat	1-March-14	✓		✓	✓
Sun	2-March-14				
Mon	3-March-14				
Tue	4-March-14				✓
Wed	5-March-14		✓		
Thu	6-March-14	✓		✓	✓
Fri	7-March-14				
Sat	8-March-14				✓
Sun	9-March-14				
Mon	10-March-14				✓
Tue	11-March-14		✓		
Wed	12-March-14	✓		✓	✓
Thu	13-March-14				
Fri	14-March-14				
Sat	15-March-14				✓
Sun	16-March-14				
Mon	17-March-14		✓		
Tue	18-March-14	✓		✓	✓
Wed	19-March-14				
Thu	20-March-14				✓
Fri	21-March-14				
Sat	22-March-14		✓		✓
Sun	23-March-14				
Mon	24-March-14	✓		✓	✓
Tue	25-March-14				

✓	Monitorin	ıg Da	у
	Sunday Holiday	or	Public



Impact Monitoring Schedule for next Reporting Period

	Date	Air G	Quality	Noise	Water Quality
		1-hour TSP	24-hour TSP	Leq (30min)	
Wed	26-March-14				✓
Thu	27-March-14				
Fri	28-March-14		✓		
Sat	29-March-14	✓		✓	✓
Sun	30-March-14				
Mon	31-March-14				✓
Tue	1-April-14				
Wed	2-April-14	✓		✓	✓
Thu	3-April-14	_	✓		
Fri	4-April-14				✓
Sat	5-April-14				
Sun	6-April-14				
Mon	7-April-14		✓		
Tue	8-April-14	✓		✓	✓
Wed	9-April-14				
Thu	10-April-14				✓
Fri	11-April-14				
Sat	12-April-14		✓		✓
Sun	13-April-14				
Mon	14-April-14	✓		✓	✓
Tue	15-April-14				
Wed	16-April-14				✓
Thu	17-April-14		✓		
Fri	18-April-14				
Sat	19-April-14				
Sun	20-April-14				
Mon	21-April-14				
Tue	22-April-14	✓			✓
Wed	23-April-14		✓		
Thu	24-April-14	✓		✓	✓
Fri	25-April-14				

✓	Monitorin	ıg Da	У
	Sunday	or	Public
	Holiday		



Appendix H

Monitoring Data Sheet



24-hour TSP Monitoring Data Sheet

Air Qualtiy Monitoring - 24-hour TSP Monitoring data sheet

		EI	LAPSED TI	ME	CHA	ART READ	ING			STANDARD)	INITIAL	FINAL	WEIGHT	DUST
DATE	SAMPLE							AVG	AVG	FLOW	AIR	FILTER	FILTER	DUST	24-hour TSP
	NUMBER	INITIAL	FINAL	ACTUAL	MIN	MAX	AVG	TEMP	PRESS	RATE	VOLUME	WEIGHT	WEIGHT	COLLECTED	IN AIR
				(min)				(oC)	(hPa)	(m3/min)	(std m3)	(g)	(g)	(g)	(ug/m^3)
24-hour TSP	Monitoring F	Results - AN	1 1												
27-Feb-14	26475	14661.78	14685.77	1439.40	31	35	33	19.6	1018.9	0.96	1376	2.725	2.8032	0.0782	57
5-Mar-14	26478	14685.77	14709.76	1439.40	30	37	33.5	16.7	1018.7	0.98	1417	2.6988	2.7658	0.0670	47
11-Mar-14	26490	14709.76	14733.75	1439.40	38	41	39.5	15	1020.2	1.15	1658	2.6856	2.8212	0.1356	82
17-Mar-14	26507	14733.75	14757.74	1439.40	39	42	40.5	19.8	1015	1.17	1680	2.6895	2.7843	0.0948	56
22-Mar-14	26567	14757.74	14781.73	1439.40	31	39	35	17.3	1021	1.03	1476	2.6873	2.8025	0.1152	78
24-hour TSP	Monitoring I	Results - AN	12												
27-Feb-14	26476	13164.87	13188.86	1439.40	29	34	31.5	19.6	1018.9	1.12	1605	2.685	2.7353	0.0503	31
5-Mar-14	26479	13188.86	13212.85	1439.40	30	33	31.5	16.7	1018.7	1.12	1616	2.692	2.7474	0.0554	34
11-Mar-14	26506	13212.85	13236.84	1439.40	35	38	36.5	15	1020.2	1.27	1834	2.6879	2.7877	0.0998	54
17-Mar-14	26508	13236.84	13260.83	1439.40	36	39	37.5	19.8	1015	1.29	1860	2.7141	2.8129	0.0988	53
22-Mar-14	26566	13260.83	13284.82	1439.40	37	41	39	17.3	1021	1.34	1935	2.6884	2.8252	0.1368	71
24-hour TSP	Monitoring I	Results - AN	13												
27-Feb-14	26459	8634.81	8658.8	1439.4	38	44	41	19.6	1018.9	1.42	2038	2.7011	2.7805	0.0794	39
5-Mar-14	26477	8658.8	8682.79	1439.4	37	43	40	16.7	1018.7	1.40	2015	2.6872	2.7271	0.0399	20
11-Mar-14	26505	8682.79	8706.78	1439.4	36	42	39	15	1020.2	1.37	1976	2.6893	2.8263	0.1370	69
17-Mar-14	26809	8706.78	8730.77	1439.4	35	41	38	19.8	1015	1.33	1913	2.7083	2.8284	0.1201	63
22-Mar-14	26573	8730.77	8754.76	1439.4	36	42	39	17.3	1021	1.37	1970	2.6483	2.8644	0.2161	110



Marine Water Quality Monitoring Data Sheet

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 26-Feb-14

Date / Time	Location	Tide*	Co-ord	linates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	110e+	East	North	m	m	Ç	mg/L	%	NTU	ppt	unit	mg/
2014/2/26 10:09	W1	ME	832978	807746	2.7	1.350	16.7	10.71	136.9	0	36.05	8.04	3.7
2014/2/20 10:07	** 1	IVIL	032710	007740	2.1	1.350	16.71	10.78	137.8	0	36.05	8.03	5.1
						1.000	16.74	10.91	139.5	0	36.01	8.01	1.8
						1.000	16.72	10.9	139.4	0	36	8.01	
2014/2/26 10:17	W2.	ME	832691	807994	12.8	6.400	16.56	10.92	139.3	0.1	36.03	8.01	3.2
						6.400	16.54	10.96	139.7	0.1	36.04	8.01	
						11.800	16.42	11.25	143.2	0	36.09	8.01	2.
						11.800	16.41	11.14	141.7	0	36.08	8.01	
						1.000	17.28	10.1	130.7	0.9	36.15	8.07	3.
						1.000	17.2	10.26	132.5	0.8	36.14	8.07	
2014/2/26 10:30	W3	ME	832036	807906	12.2	6.100	16.65	10.67	136.3	0.3	36.03	8.04	2.
						6.100	16.63	10.77	137.5	0.2	36.01	8.04	
						11.200	16.46	10.94	139.3	0.5	36.06	8.04	2.
						11.200	16.39	11.05	140.5	1	36.11	8.04	
						1.000	16.43	10.23	130.3	0.3	36.22	8.07	3.
						1.000	16.43	10.25	130.5	0.3	36.22	8.07	
2014/2/26 9:54	C1	ME	833709	808180	15.8	7.900	16.42	10.31	131.2	0.4	36.23	8.08	3.
						7.900	16.41	10.35	131.8	0.4	36.23	8.08	
						14.800	16.41	10.4	132.5	0.3	36.25	8.08	3.
						14.800	16.41	10.42	132.7	0.4	36.25	8.08	-
						1.000	17.69	10.29	134	0.1	35.94	8.06	3.
						1.000	17.63	10.43	135.7	0.1	35.97	8.05	
2014/2/26 10:44	C2	ME	831469	807728	9.8	4.900	16.75	10.51	134.5	0.1	36.02	8	3.
			00000			4.900	16.75	10.53	134.7	0.1	36.02	8	
						8.800	16.66	10.62	135.6	0.1	36.03	7.99	2.
						8.800	16.65	10.57	135	0.2	36.04	7.99	
						1.000	16.45	10.23	130.3	0.2	36.19	8.05	3.
						1.000	16.44	10.24	130.4	0.1	36.19	8.05	٠.
2014/2/26 9:34	C3	ME	832224	808877	16.3	8.150	16.43	9.62	122.5	0.3	36.26	8.06	2.
201 1/2/20 7.5 1	0.5		032221	000077	10.5	8.150	16.42	9.64	122.8	0.3	36.26	8.07	٥.
						15.300	16.43	10.43	132.9	0.8	36.28	8.07	3.
						15.300	16.43	9.82	125.1	0.7	36.28	8.07	
2014/2/26 16:21	W1	MF	832980	807722	2.8	1.400	18.48	8.32	110.1	0.5	36.14	7.84	2.
201 ((2) 20 10:21			032700	001122	2.0	1.400	18.47	8.32	110.1	0.4	36.14	7.85	۵.
						1.000	17.87	8.64	112.7	0.2	35.63	7.81	3.
						1.000	17.88	8.64	112.7	0.2	35.62	7.81	٠.
2014/2/26 16:08	W2	MF	832665	807972	13.2	6.600	16.78	8.65	110.6	0.1	35.73	7.78	2.
201 1/2/20 10:00	2			001712	15.2	6.600	16.78	8.66	110.6	0.1	35.73	7.77	
						12.200	16.29	8.63	109.8	1.7	36.53	7.77	3.
						12.200	16.28	8.63	109.8	1.5	36.54	7.77	٥.
						1.000	17.72	8.85	115	0.1	35.49	7.83	2.
						1.000	17.53	8.76	113.4	0	35.49	7.82	
2014/2/26 15:53	W3	MF	832036	807894	12.6	6.300	16.83	8.8	112.6	0	35.62	7.79	2.
						6.300	16.79	8.81	112.6	0	35.63	7.78	
						11.600	16.38	8.79	111.5	0.5	35.75	7.76	3.
	1					11.600	16.33	8.89	112.7	0.7	35.8	7.76	٥.
						1.000	17.43	8.72	112.9	1	35.73	8.02	2.
						1.000	17.42	8.78	113.6	0.7	35.8	8	
2014/2/26 16:28	C1	MF	833707	808181	16.6	8.300	16.7	8.79	112.4	0.2	36.02	7.97	3.
	C1	1111	555707	030101	10.0	8.300	16.62	8.92	113.9	0.1	36.08	7.96	٥.
						15.600	16.49	9.38	119.7	0.3	36.27	7.92	2.
						15.600	16.49	9.42	120.2	0.6	36.3	7.92	۷.
						1.000	17.7	8.14	105.8	0	35.48	7.61	2.
						1.000	17.7	8.14	105.8	0	35.49	7.61	۷.
2014/2/26 15:40	C2	MF	831469	807719	9.2	4.600	16.85	10.05	128.6	0.1	35.62	7.95	2.
2011/2/2013:70	C2	1111	031407	007719	7.2	4.600	16.83	9.93	126.9	0.1	35.62	7.93	۷.
						8.200	16.63	9.77	124.4	0.1	35.63	7.88	4.
						8.200	16.59	9.76	124.2	0.1	35.64	7.86	4.
						1.000	17.8	8.73	113.1	0.1	34.89	7.2	2.
						1.000	17.8	8.75	113.5	-0.1	34.9	7.19	Z.
2014/2/26 15:08	C3	MF	832228	909900	15 /	7.700	16.9	8.73	111.4	0.2	34.96	7	3.
2014/2/20 13:08	CS	IVIT	032228	808890	15.4	7.700	16.54	9.05	114.6	0.2	35.06	6.92	٥.
	1				1	14.400	16.45	8.76	110.9	1.6	35.28	6.78	3.0
						14.400	10.15						

MF- Mid Flood Tide

ME- Mid Ebb tide

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 1-Mar-14

Date / Time	Location	Tide*	Co-ore	linates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	Tiuc	East	North	m	m	°C	mg/L	%	NTU	ppt	unit	mg/l
2014/3/1 12:17	W1	ME	832991	807724	2.8	1.400	17.42	9.79	125.8	0.5	34.61	7.92	2.6
201 ((3)1 12:11		1112	052771	007721	2.0	1.400	17.42	9.94	127.7	0.4	34.6	7.91	2.0
						1.000	17.53 17.53	10.37 10.38	133.6 133.7	0.1	34.63 34.63	7.88 7.88	2.6
2011/01/12/21	****		000000	005000	40.0	6.400	17.39	10.37	133.2	0.1	34.69	7.86	2.0
2014/3/1 12:24	W2	ME	832690	807992	12.8	6.400	17.39	10.35	133	0.2	34.69	7.86	2.9
						11.800	17.43	10.17	131	0.2	34.88	7.86	2.0
						11.800	17.43	10.15	130.7	0.2	34.88	7.86	2.0
						1.000	17.51	9.81	126.3	0.6	34.74	7.97	2.6
						1.000 6.100	17.49 17.44	9.83 9.71	126.6 124.9	0.4	34.75 34.76	7.97 7.96	
2014/3/1 12:42	W3	ME	832034	807891	12.2	6.100	17.44	9.71	124.9	0.2	34.77	7.96	2.2
						11.200	17.48	10.42	134.4	1.1	34.9	7.96	
						11.200	17.48	10.41	134.3	1.1	34.91	7.96	2.4
						1.000	17.72	10.25	132.2	0.3	34.23	7.81	1.8
						1.000	17.66	10.18	131.1	0.3	34.24	7.81	1.0
2014/3/1 11:55	C1	ME	833707	808196	16	8.000	17.41	10.19	130.8	0.2	34.39	7.82	2.5
						8.000 15.000	17.42 17.48	10.18 10.13	130.7 130.3	0.1	34.42 34.52	7.82 7.84	
						15.000	17.48	10.13	130.3	0.2	34.52	7.84	2.6
						1.000	17.40	10.13	134.8	0.2	34.73	8.02	
						1.000	17.63	10.45	134.9	0.4	34.72	8.01	1.5
2014/3/1 13:06	C2	ME	831453	807724	9.6	4.800	17.49	10.46	134.8	0.2	34.83	8.01	3.0
2014/3/1 13.00	C2	IVIL	031433	007724	9.0	4.800	17.47	10.53	135.6	0.1	34.84	8.01	5.0
						8.600	17.41	10.66	137.4	0.3	35.04	8	2.2
						8.600	17.41	10.56	136	0.5	35.06	8	
						1.000	17.61 17.65	11.24 11.22	144.5 144.4	0.1	34.07 34.08	7.79 7.8	2.1
						8.400	17.03	10.97	140.8	0	34.06	7.82	
2014/3/1 11:32	C3	ME	832223	808887	16.8	8.400	17.45	10.86	139.5	0	34.35	7.81	4.0
						15.800	17.47	11.26	144.7	0.1	34.42	7.82	5.6
						15.800	17.47	11.14	143.2	0.2	34.44	7.82	3.0
								1					
2014/3/1 17:45	W1	MF	832984	807749	2.7	1.350	17.64	10.31	133.9	1.5	35.65	8.13	2.1
						1.350 1.000	17.64 17.53	10.34 9.75	134.2 126.3	1.3 0.2	35.65 35.67	8.13 8.07	
						1.000	17.55	9.73	120.5	0.2	35.66	8.05	2.4
						5.500	17.54	9.94	120.5	0.2	35.82	8.02	
2014/3/1 17:32	W2	MF	832691	807968	12.8	6.400	17.54	9.96	129.2	0.2	35.83	8.02	2.5
						11.800	17.44	9.9	128.3	0.3	35.98	8.01	2.5
						11.800	17.45	9.88	128.1	1.3	36.01	8.01	2.3
						1.000	17.75	8.87	115.5	0.2	35.71	7.99	1.5
						1.000	17.71	8.99	117	0.2	35.71	7.99	
2014/3/1 17:20	W3	MF	832062	807906	11	5.500 5.500	17.52 17.52	9.35 9.37	121.3 121.6	0.4	35.84 35.87	7.96 7.96	1.8
						10.000	17.43	9.46	122.6	0.9	35.99	7.94	
						10.000	17.43	9.42	122.1	1.1	36.01	7.94	3.8
						1.000	17.86	11.06	144.2	1.4	35.69	8.16	2.2
						1.000	17.88	11.05	144.2	1.1	35.66	8.15	2.2
2014/3/1 17:57	C1	MF	833694	807196	15.8	7.900	17.67	10.91	141.8	0.2	35.76	8.11	2.7
						7.900	17.67 17.77	10.9 10.16	141.7 132.3	0.1	35.76 35.72	8.11 8.03	
						14.800 14.800	17.77	10.10	132.5	0.2	35.72	8.03	2.2
						1.000	18.04	9.26	121.1	0.2	35.73	7.99	
						1.000	18.04	8.85	115.8	0.1	35.58	7.97	4.3
2014/3/1 17:07	C2	MF	831481	807724	9.2	4.600	17.72	8.65	112.6	0.1	35.72	7.93	3.6
2014/2/11 17.07	C2	1411.	031401	007724	7.4	4.600	17.72	8.74	113.7	0	35.74	7.93	5.0
						8.200	17.42	8.89	115.2	0.1	35.89	7.89	7.5
	1					8.200	17.4	8.82	114.2	0.1	35.93	7.88	
						1.000	17.73 17.73	10.08 10.04	131.1 130.5	0.2	35.55 35.54	8.02 8.01	2.3
		_				7.700	17.73	9.83	130.3	0.2	35.7	8.02	
2014/3/1 18:01	C3	MF	832236	808872	15.4	7.700	17.76	9.83	127.7	0.1	35.71	8.02	2.5
						14.400	17.79	9.7	126.5	0	35.74	8.03	2.0
		l				14.400	17.79	9.71	126.5	0.2	35.74	8.03	3.0

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 4-Mar-14

Date / Time	Location	Tide*	Co-ore	dinates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	Tiue.	East	North	m	m	°C	mg/L	%	NTU	ppt	unit	mg/l
2014/3/4 14:30	W1	ME	832961	807744	2.8	1.400	17.61	9.3	121.3	0.6	36.34	8.22	2.8
						1.400	17.61 17.68	9.39 9.7	122.5 126.6	0.6	36.35 36.33	8.22 8.18	
						1.000	17.68	9.74	127.2	0.6	36.32	8.18	4.6
2014/3/4 14:36	W2	ME	832666	807979	13.6	6.800	17.62	9.84	128.3	0.4	36.42	8.19	3.1
2014/3/4 14.30	VV Z	IVIL	832000	001919	15.0	6.800	17.62	9.83	128.3	0.4	36.43	8.18	3.1
						12.600 12.600	17.56 17.57	9.77 9.76	127.4 127.2	2.7	36.47 36.46	8.18 8.18	3.0
						1.000	17.57	9.70	127.2	0.6	36.21	8.16	
						1.000	17.67	9.93	129.4	0.5	36.21	8.16	3.2
2014/3/4 14:55	W3	ME	832021	807893	12.6	6.300	17.52	9.88	128.5	0.9	36.28	8.16	2.8
2014/3/4 14.33	***3	IVIL	032021	00/073	12.0	6.300	17.52	9.87	128.5	0.9	36.29	8.16	2.0
						11.600 11.600	17.59 17.59	9.81 9.8	127.8 127.6	1.6 1.6	36.34 36.34	8.17 8.17	3.6
						1.000	17.59	9.65	125.7	1.3	36.39	8.1	
						1.000	17.59	9.65	125.8	1.3	36.39	8.11	3.2
2014/3/4 14:07	C1	ME	833712	808190	15.7	7.850	17.56	9.64	125.7	0.4	36.5	8.1	2,6
2014/3/4 14.07	Cı	IVIL	033712	000170	13.7	7.850	17.56	9.63	125.5	0.4	36.51	8.1	2.0
						14.700 14.700	17.47 17.46	9.61 9.6	125.1 125	0.6 0.6	36.58 36.58	8.11 8.11	2.6
						1.000	17.59	9.39	122.4	0.7	36.36	8.16	
						1.000	17.58	9.37	122.1	0.7	36.37	8.15	2.6
2014/3/4 15:10	C2	ME	831469	807716	9.6	4.800	17.58	9.32	121.6	0.4	36.48	8.13	2.4
201 1/3/1 13.10	C2	14112	031107	007710	7.0	4.800	17.57	9.35	121.9	0.4	36.5	8.13	2.1
						8.600 8.600	17.49 17.49	9.47 9.49	123.4 123.7	0.5 0.6	36.6 36.6	8.12 8.12	2.0
						1.000	17.49	9.87	127.8	1.9	35.98	8.14	
						1.000	17.38	9.91	128.3	1.4	35.99	8.14	2.3
2014/3/4 13:48	C3	ME	832222	808863	16.1	8.050	17.38	9.46	122.5	0.8	36.05	8.14	1.9
2014/3/4 13.46	CJ	IVIL	032222	808803	10.1	8.050	17.37	9.52	123.4	0.6	36.06	8.14	1.7
						15.100 15.100	17.49 17.5	9.65 9.66	125.4 125.7	0.8	36.24 36.27	8.17 8.17	2.1
						13.100	17.5	9.00	123.7	1.3	30.27	0.17	
2014/3/4 8:49	W1	MF	832972	907700	2.7	1.350	17.64	11.92	154.3	0.7	35.1	8.2	4.4
2014/3/4 8:49	W I	IVIF	832912	807722	2.1	1.350	17.64	12.13	157	0.6	35.12	8.2	4.4
						1.000	17.65	11.5	148.9	1.2	35.2	8.24	2.6
						1.000 6.300	17.65 17.63	11.49	148.8 147.6	0.5	35.19 35.24	8.23 8.22	
2014/3/4 8:54	W2	MF	832682	807991	13.8	6.900	17.62	11.37	147.3	0.5	35.24	8.21	2.1
						12.800	17.55	11.15	144.2	2.3	35.33	8.2	3.1
						12.800	17.55	11.14	144.1	2.3	35.34	8.2	5.1
						1.000	17.55	11.3	146.2	7.4	35.27	8.18	2.4
						1.000 6.300	17.55 17.48	11.29 11.21	146 144.9	7.4 0.6	35.27 35.35	8.17 8.16	
2014/3/4 9:16	W3	MF	832031	807906	12.6	6.300	17.48	11.19	144.6	0.5	35.35	8.16	3.0
						11.600	17.52	11.08	143.4	1.2	35.42	8.16	2.8
						11.600	17.52	11.01	142.5	1	35.42	8.16	2.0
						1.000	17.67	11.31	146.4	1.2	34.95	8.09	3.3
						1.000 8.150	17.67 17.68	11.4 10.18	147.5 131.8	0.9 0.6	34.95 34.97	8.1 8.1	
2014/3/4 8:34	C1	MF	833708	808179	16.3	8.150	17.68	11.39	147.5	0.5	34.98	8.1	4.6
						15.300	17.68	11.74	152	0.5	35	8.1	2.8
						15.300	17.68	11.36	147.1	0.5	35.01	8.1	2.0
						1.000	17.39 17.39	10.32 10.32	133 133	2 1.8	35.19 35.19	8.12 8.13	3.4
						5.400	17.39	10.32	133.1	1.8	35.19	8.13	
2014/3/4 9:38	C2	MF	831464	807728	10.8	5.400	17.4	10.32	133.2	0.8	35.28	8.13	2.5
						9.800	17.46	10.32	133.4	0.8	35.42	8.15	2.6
	1					9.800	17.47	10.33	133.6	1	35.43	8.15	2.0
						1.000	17.67	11.23 11.22	145.2 145.1	0.5 0.5	34.81 34.82	8.07 8.07	2.3
						1.000 8.450	17.67 17.64	12.15	145.1	0.5	34.82	8.07	
2014/3/4 8:16	C3	MF	832223	808839	16.9	8.450	17.64	11.05	142.8	0.5	34.86	8.09	2.4
						15.900	17.64	11.01	142.4	0.9	34.91	8.09	2.3
	1					15.900	17.65	10.98	142	0.8	34.91	8.09	2.3

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 6-Mar-14

Date / Time	Location	Tide*	Co-ore	dinates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	Tiue.	East	North	m	m	ဗ	mg/L	%	NTU	ppt	unit	mg/
2014/3/6 16:10	W1	ME	832966	807719	2.8	1.400	17.05	10.01	129	0.6	36.25	8.29	2.8
						1.400	17.05	10	129	0.5	36.26	8.29	
						1.000	17.03	10.43	134.4	1.9	36.24	8.35	2.7
						1.000	17.04	10.26	132.2	1.7	36.23	8.34	
2014/3/6 15:58	W2	ME	832694	807990	13.1	6.550	17.04	10.22	131.7	0.7	36.25	8.32	2.1
						6.550	17.05	10.23	131.8	0.6	36.24	8.32	
						12.100	17.01	9.96	128.3	0.6	36.22	8.31	2.4
						12.100	17.01	9.97	128.4	0.6	36.21	8.31	
						1.000	17.19	9.5	122.8	1.2	36.26	8.29	2.9
						1.000	17.2	9.5	122.8	1.3	36.2	8.29	
2014/3/6 15:46	W3	ME	832039	807894	11.8	5.900	17.15	9.55	123.2	1.1	36.1	8.29	4.
						5.900	17.13	9.57	123.4	1	36.1	8.29	
						10.800	17.1	9.66	124.5	1.1	36.1	8.29	3.9
						10.800	17.09	9.67	124.7	1.3	36.1	8.29	
						1.000	17.03	9.93	127.8	0.5	36.14	8.29	2.5
						1.000	17.03	10.53	135.7	0.5	36.28	8.29	
2014/3/6 16:18	C1	ME	833708	808179	15.6	7.800	17.01	9.91	127.5	0.6	36.09	8.29	3.
						7.800	17.01	9.92	127.7	0.6	36.17	8.29	
						14.600	17	9.47	121.9	1.2	36.24	8.28	2.
						14.600	17	9.47	121.9	2.3	36.21	8.28	
						1.000	17.14	8.49	109.6	2.4	36.29	8.24	4.
						1.000	17.13	8.69	112.1	2.3	36.14	8.24	
2014/3/6 15:34	C2	ME	831469	807727	10.2	5.100	17.14	9.09	117.5	1.9	36.47	8.24	5.
2017/3/0 13.34	CZ	IVIL	051407	001121	10.2	5.100	17.13	9.09	117.5	1.8	36.49	8.24	٥.
						9.200	17.19	9.4	121.6	3.3	36.37	8.25	3.
						9.200	17.19	9.41	121.6	3.2	36.26	8.25	٥.
						1.000	17.06	9.26	119.3	0.8	36.15	8.27	2.
						1.000	17.06	9.24	119	0.7	36.1	8.27	۷.
2014/2/6/16/44	GD.	N.C.	022220	000001	16.0	8.400	17	9.2	118.3	0.6	36.05	8.27	2
2014/3/6 16:44	C3	ME	832228	808881	16.8	8.400	17	9.2	118.2	0.6	35.98	8.27	3.
						15.800	16.97	10.09	129.6	1.1	35.94	8.31	2 /
						15.800	16.97	10.15	130.4	1	35.95	8.31	3.
							45.24	0.00	110.1	0.6	24.04	2.12	
2014/3/6 9:36	W1	MF	832972	807746	2.7	1.350	17.21	9.23	118.4	0.6	34.94	8.19	2.
						1.350	17.21	9.2	117.9	0.7	34.82	8.19	
						1.000	17.21	8.79	112.7	1	34.93	8.17	2.
						1.000	17.21	8.83	113.3	1.4	34.93	8.17	
2014/3/6 9:22	W2.	MF	832663	807987	12.8	5.600	17.22	9	115.5	1.3	34.87	8.18	2.
201 113/0 7.22	2	1111	052005	007707	12.0	6.400	17.22	9.02	115.7	1	34.94	8.19	٥.
						11.800	17.23	9.23	118.4	1.6	34.86	8.2	3.
						11.800	17.24	9.23	118.4	1.7	34.93	8.2	-
						1.000	17.2	9.48	121.4	1.7	34.69	8.12	3.
						1.000	17.2	9.52	121.8	1.6	34.6	8.13	٠.
2014/3/6 9:08	W3	MF	832029	807890	11.2	5.600	17.2	9.57	122.5	1.4	34.67	8.13	3.
201 1/3/0 7.00	,,,,	1411	03202)	007070	11.2	5.600	17.19	9.59	122.9	1.5	34.75	8.14	٥.
						10.200	17.23	9.73	124.7	1.3	34.79	8.18	3.
						10.200	17.23	9.75	125.1	1.3	34.89	8.18	٥.
						1.000	17.16	10.41	133.5	0.9	35.07	8.28	2.
						1.000	17.16	10.41	133.5	0.8	35.04	8.28	۷.
2014/3/6 10:01	C1	MF	833708	808179	15.2	7.600	17.12	10.51	134.7	0.7	35.03	8.28	2.
2014/3/0 10.01	CI	IVII	033700	000179	13.2	7.600	17.08	10.55	135.1	1.1	35.11	8.28	۷.
						14.200	17.06	10.52	134.7	1.3	35.09	8.27	2.
						14.200	17.05	10.5	134.4	1.2	35.13	8.27	۷.
		· <u></u>				1.000	17.13	11	140.5	1.4	34.46	8.1	4.
						1.000	17.13	10.9	139.2	1.2	34.44	8.1	4.
2014/3/6 8:55	C2	MF	831464	807726	9.4	4.700	17.13	10.76	137.5	1.2	34.49	8.11	5.
2014/3/0 6:33	C2	IVIT	031404	007720	7.4	4.700	17.13	10.71	136.8	1.4	34.49	8.11	٥.
						8.400	17.18	10.65	136.1	1	34.55	8.12	4
						8.400	17.19	10.62	135.9	0.9	34.57	8.12	4.
						1.000	17.1	10.41	133.4	0.8	35.14	8.27	2
						1.000	17.1	10.37	132.9	0.8	35.15	8.27	3.
	1		000000	2055		7.700	17.07	10.3	131.9	1.2	35.09	8.27	
2014/2/6:22		MF	832229	808866	15.4								3.:
2014/3/6 10:25	C3	IVII	052227	000000	10	7.700	17.07	10.31	132	1.2	35.08	8.27	
2014/3/6 10:25	C3	IVII	03222)	000000	13.1	7.700 14.400	17.07 17.04	10.31	129.2	1.2	34.94	8.27 8.26	2.

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 8-Mar-14

Date / Time	Location	Tide*	Co-oro	linates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	Tide.	East	North	m	m	ပ	mg/L	%	NTU	ppt	unit	mg/l
2014/3/8 17:47	W1	ME	832984	807739	2.8	1.400	16.89	7.55		2.1	35.45	8.14	4.5
						1.400	16.87 16.87	7.55 7.07	96.5 90.4	0.8	35.45 35.45	8.15 8.14	
						1.000	16.88	7.06	90.4	0.8	35.45	8.14	3.1
2014/3/8 17:35	W2	ME	832688	807993	13.2	6.600	16.83	6.94	88.6	1.4	35.46	8.14	2.9
2014/3/6 17.33	W Z	IVIL	032000	007993	13.2	6.600	16.84	6.92	88.5	1.4	35.45	8.14	2.9
						12.200 12.200	16.84 16.84	6.89 6.89	88.1 88	1.1	35.51 35.51	8.17 8.17	3.8
						1.000	16.91	9.29	118.8	1.8	35.44	8.16	
						1.000	16.92	9.27	118.6	1.8	35.43	8.16	2.7
2014/3/8 17:19	W3	ME	832034	807908	10.6	5.300	16.88	9.04	115.6	0.6	35.44	8.16	2.5
						5.300 9.600	16.89 16.84	9.02 7.71	115.3 98.5	0.6	35.43 35.44	8.16 8.15	
						9.600	16.84	7.71	98.4	0.8	35.44	8.15	2.4
						1.000	16.94	7.12	91.2	1	35.48	8.17	2.4
						1.000	16.95	7.1	91	0.9	35.48	8.17	2.4
2014/3/8 17:54	C1	ME	833706	808177	16.8	8.400 8.400	16.88 16.88	7.02 7.02	89.8 89.8	0.4	35.53 35.53	8.19 8.19	4.5
						15.800	16.48	7.02	89.7	1.1	35.45	8.2	
						15.800	16.47	7.06	89.6	1.2	35.45	8.2	5.0
						1.000	16.92	8.58	109.7	0.4	35.43	8.15	2.8
						1.000	16.92	8.56	109.5	0.6	35.43	8.15	2.0
2014/3/8 17:06	C2	ME	831449	807744	9.7	4.850 4.850	16.85 16.83	8.5 8.43	108.7 107.6	0.5 0.5	35.43 35.44	8.14 8.14	2.6
						8.700	16.69	8.36	107.0	1.1	35.44	8.12	
						8.700	16.7	8.33	106.1	1.1	35.44	8.12	4.8
						1.000	16.94	6.63	84.9	0.9	35.49	8.18	2.7
						1.000	16.95	6.6	84.5	0.7	35.49	8.18	2.7
2014/3/8 18:15	C3	ME	832229	808879	17.3	8.650 8.650	16.86 16.85	6.45	82.5 82.5	0.5	35.53 35.54	8.2 8.2	2.6
						16.300	16.5	6.51	82.6	1	35.45	8.2	2.2
						16.300	16.39	6.49	82.2	1.4	35.43	8.2	2.2
							4.5.00	10.00	100.5	0.6	0.4.54	0.4.4	
2014/3/8 10:56	W1	MF	832996	807716	2.7	1.350 1.350	16.92 16.92	10.96 10.98	139.6 139.9	0.6	34.71 34.71	8.14 8.14	2.6
						1.000	16.92	11.58	146.8	1	33.97	8.13	
						1.000	16.92	11.66	147.4	1	33.48	8.13	2.8
2014/3/8 11:01	W2	MF	832690	807999	13.8	6.300	16.92	11.69	148.1	0.6	33.82	8.14	5.4
						6.900 12.800	16.92	11.68 11.72	148.2	0.6	34.1 33.46	8.14 8.15	•••
						12.800	16.85 16.81	11.72	148 148.3	1.6	34.81	8.15	3.2
						1.000	16.89	12.35	156.8	1.3	34.22	8.19	3.9
						1.000	16.9	12.35	156.9	1.2	34.23	8.19	3.9
2014/3/8 11:15	W3	MF	832038	807904	12.6	6.300	16.82	12.44	158.1	0.9	34.69	8.18	4.3
						6.300 11.600	16.82 16.77	12.43 12.37	158.1 157.1	0.9	34.75 34.66	8.17 8.16	
						11.600	16.77	12.36			34.66	8.16	2.9
						1.000	16.95	10.66		0.6	32.62	8.13	2.8
						1.000	16.95	10.66	134.2	0.6	32.65	8.13	2.0
2014/3/8 10:42	C1	MF	833703	808189	16.4	8.200 8.200	16.95 16.94	10.52 10.54	134 134.2	0.6	34.62 34.48	8.13 8.13	3.1
						15.400	16.95	10.56		0.5	34.52	8.14	20
						15.400	16.96	10.61	134.5	0.8	33.81	8.14	2.9
						1.000	16.82	12.53	159.1	0.9	34.54	8.2	2.6
						1.000 5.200	16.82 16.74	11.75 11.72	149.3 148.9	0.8	34.54 34.82	8.2 8.19	
2014/3/8 11:29	C2	MF	831469	807771	10.4	5.200	16.74	11.72		0.8	33.84	8.18	3.3
						9.400	16.66	11.65	147.7	2	34.73	8.16	2.2
						9.400	16.66	11.63	147.4	1.9	34.7	8.17	۷.۷
						1.000	16.95 16.96	10.6 10.54	133.8 133.8	0.5	33.11 33.96	8.13 8.13	3.3
			0511	2022		1.000 8.500	16.96	10.54		0.5	33.96	8.13	
2014/3/8 10:27	C3	MF	832233	808872	17	8.500	16.96	10.62	134.4	0.6	33.59	8.13	2.6
						16.000	16.96	10.54	134	0.5	34.33	8.13	4.9
						16.000	16.96	10.51	133.9	0.5	34.56	8.14	7./

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 10-Mar-14

Date / Time	Location	Tide*	Co-oro	linates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	Tide.	East	North	m	m	ပ	mg/L	%	NTU	ppt	unit	mg/l
2014/3/10 17:37	W1	ME	832948	807749	2.8	1.400	16.42	6.97	88.2	1.5	35.22	8.24	1.8
						1.400	16.42 16.27	6.98 8.15	88.4 102.7	1.6 1.4	35.19 35.01	8.24 8.31	
						1.000	16.28	8.12	102.7	1.3	35.01	8.3	2.9
2014/3/10 17:43	W2	ME	832690	807994	13.1	6.550	16.04	7.96	100.1	2.1	35.32	8.29	3.0
2014/3/10 17.43	W Z	IVIL	032090	007994	13.1	6.550	16.09	7.96	100.1	2	35.31	8.29	5.0
						12.100 12.100	16.09 16.12	7.83 7.82	98.6 98.6	2.8 2.8	35.49 35.44	8.28 8.28	2.6
						1.000	16.51	9.14	115.9	2.1	35.3	8.27	
						1.000	16.52	9.14	115.9	2.1	35.29	8.27	4.0
2014/3/10 17:59	W3	ME	832021	807908	12.5	6.250	15.95	9.22	115.8	1.7	35.33	8.3	2.0
			00-0-1			6.250 11.500	15.96 16.05	9.2 9.11	115.5 114.6	1.6	35.35 35.48	8.3 8.29	
						11.500	16.03	9.11	114.6	3	35.48	8.29	2.4
						1.000	15.85	7.88	98.6	2	35.19	8.25	1.5
						1.000	15.85	7.89	98.7	2	35.17	8.25	1.5
2014/3/10 17:22	C1	ME	833716	808172	16.2	8.100	15.85	7.79	97.7	1.8	35.56	8.25	1.8
						8.100 15.200	15.85 15.85	7.76 7.75	97.3 97.3	1.8	35.56 35.73	8.25 8.24	
						15.200	15.85	7.73	97	1.9	35.7	8.25	1.8
						1.000	16.55	8.39	106.2	2.4	34.86	8.2	2.7
						1.000	16.55	8.39		2.3	34.91	8.2	2.1
2014/3/10 18:15	C2	ME	831491	807726	10.2	5.100	16.59	8.56	108.5	2	34.94 34.97	8.21 8.21	3.8
						5.100 9.200	16.59 16.59	8.57 8.65	108.7 109.8	2.4	35.33	8.21	
						9.200	16.59	8.65	109.8	2.4	35.31	8.22	2.5
						1.000	15.84	8.53	106.6	2	34.85	8.24	3.6
						1.000	15.84	8.54	106.7	1.9	34.86	8.25	3.0
2014/3/10 17:04	C3	ME	832224	808884	17	8.500	15.85	8.19	102.6 102.6	2	35.45	8.25 8.25	4.0
						8.500 16.000	15.85 15.85	8.18 8.08	102.6	1.9	35.47 35.84	8.25	
						16.000	15.85	8.04	101	2	35.82	8.25	3.4
2014/3/10 8:44	W1	MF	832949	807724	2.6	1.300	16.4	11.05		1.7	34.52	8.19	1.8
						1.300	16.41 16.42	11.03 10.59	138.9 133.5	1.6 1.4	34.52 34.59	8.2 8.2	
						1.000	16.42	10.59	133.8	1.4	34.39	8.2	2.4
2014/2/10 0-52	W2	MF	832684	807984	12.4	6.000	16.43	10.65	134.3	1.3	34.62	8.2	2.8
2014/3/10 8:52	W Z	IVIF	832084	807984	13.4	6.700	16.43	10.66	134.5	1.3	34.64	8.2	2.8
						12.400	16.38	10.57	133.2	6.4	34.62	8.21	2.7
						12.400	16.38 16.41	10.57 10.57	133.2 133.3	5.5 1.7	34.63 34.65	8.21 8.2	
						1.000	16.41	10.57	133.3	1.5	34.61	8.2	2.7
2014/3/10 9:11	W3	MF	832049	807896	12	6.000	16.38	10.5	132.3	2.2	34.62	8.21	2.7
2014/3/10 9.11	***	IVII	032049	807890	12	6.000	16.38	10.49	132.2	3	34.64	8.21	2.1
						11.000	16.39 16.39	10.47 10.47	132 132	2.7 2.6	34.66 34.66	8.21 8.21	2.6
						1.000	16.35	10.47		1.5	34.46	8.19	1.0
						1.000	16.35	10.59		1.5	34.47	8.19	1.9
2014/3/10 8:32	C1	MF	833690	808179	15.8	7.900	16.18	10.62	133.1	1.5	34.48	8.2	3.7
			12370			7.900 14.800	16.12 16.1	10.62 10.58	133 132.4	1.7	34.47 34.39	8.19 8.19	
						14.800	16.1	10.58	132.4	2.3	34.39	8.19	2.3
						1.000	16.41	10.44	131.6	1.6	34.66	8.2	2.5
						1.000	16.41	10.43	131.6	1.5	34.67	8.2	2.5
2014/3/10 9:27	C2	MF	831479	807764	10	5.000	16.41	10.41	131.1	1.4	34.53	8.2	3.8
						5.000 9.000	16.41 16.4	10.38 10.37	130.9 130.7	1.5 1.7	34.66 34.66	8.2 8.2	
						9.000	16.4	10.37	130.7	1.7	34.65	8.2	2.4
						1.000	16.35	11.08		1.4	34.14	8.18	3.2
						1.000	16.36	11.08	139.2	1.4	34.31	8.18	٥.٤
2014/3/10 8:14	C3	MF	832247	808890	15.9	7.950	16.37	10.9	137.2	1.4	34.45	8.18	3.1
						7.950 14.900	16.37 16.14	10.93 10.46	137.5 131	1.5 2.3	34.47 34.42	8.18 8.19	
1						14.900	16.14	10.46		2.2	34.42	8.19	4.2

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 12-Mar-14

Date / Time	Location	Tide*	Co-ore	dinates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	Tiuc	East	North	m	m	${\mathfrak C}$	mg/L	%	NTU	ppt	unit	mg/l
2014/3/12 9:56	W1	ME	832944	807716	2.7	1.350	16.26	8.49	106.8	2.3	34.79	8.07	2.1
						1.350	16.27	8.53	107.3 104.3	2.5	34.79 34.79	8.06	
						1.000	16.22 16.21	8.29 8.2	104.3	2.6 2.7	34.79	8.06 8.05	4.0
						6.400	16.17	8.21	103.1	2.6	34.87	8.05	
2014/3/12 10:05	W2	ME	832680	807998	12.8	6.400	16.17	8.15	102.4	2.7	34.88	8.05	3.9
						11.800	15.9	8.13	101.6	3.2	34.87	8.05	5.2
						11.800	15.89	8.18	102.2	2.8	34.87	8.05	5.2
						1.000	16.04 16.04	8.16 8.19	102.3 102.6	1.3 1.3	34.85 34.85	8.04 8.04	4.4
						5.900	15.92	8.01	102.0	1.3	34.63	8.03	
2014/3/12 10:25	W3	ME	832024	807906	11.8	5.900	15.92	8.05	100.8	1.3	34.91	8.03	2.5
						10.800	15.92	7.87	98.5	2.8	34.97	8.01	3.2
						10.800	15.92	8.08	101.1	2.9	34.97	8.01	3.2
						1.000	16	8.39	105	3.7	34.63	8.02	2.9
						1.000	15.99	8.45	105.7	3.8	34.64	8.02	2.,
2014/3/12 9:46	C1	ME	833708	808192	17.2	8.600 8.600	15.99 15.95	8.44 8.46	105.6 105.8	3.8 3.9	34.71 34.71	8.02 8.03	3.6
						16.200	15.82	8.37	104.3	3.7	34.73	8.04	
						16.200	15.82	8.4	104.7	3.6	34.73	8.04	4.4
						1.000	15.97	8.22	102.8	1.5	34.78	8.02	2.6
						1.000	15.95	8.05	100.7	1.3	34.79	8.02	2.0
2014/3/12 10:41	C2	ME	831479	807756	9.9	4.950	15.85	7.91	98.8	1.2	34.91	8.01	2.2
						4.950 8.900	15.85 15.88	7.79	100 97.4	1.2	34.9 34.96	8.01 8.01	
						8.900	15.88	7.19	98.1	1.2	34.90	8.01	2.4
						1.000	16.01	8.69	108.7	3.6	34.58	8	
						1.000	15.99	8.73	109.1	3.7	34.58	8	4.2
2014/3/12 9:28	C3	ME	832243	808881	16.4	8.200	15.99	8.5	106.3	4.2	34.66	8	3,3
2014/3/12 9.20	CJ	IVIL	032243	000001	10.4	8.200	15.99	8.54	106.8	4	34.67	8	3.3
						15.400	15.88	8.44	105.4	4.2	34.69	8.01	4.6
						15.400	15.87	8.48	105.8	4.2	34.69	8.02	
						1.400	16.31	9.11	115.5	2.2	35.85	8.07	
2014/3/12 15:09	W1	MF	832962	807723	2.8	1.400	16.31	9.04	114.6	2.3	35.85	8.06	4.1
						1.000	16.41	9.24	117.4	2	35.87	8.07	2.2
						1.000	16.4	9.32	118.4	2	35.9	8.07	2.3
2014/3/12 14:56	W2	MF	832692	807949	12.6	5.500	16.21	9.13	115.7	2.1	36.13	8.02	2.2
			00 20, 2			6.300	16.22	9.14	115.8	2.1	36.16	8.02	
						11.600 11.600	16.06 16.06	9.13 9.13	115.5 115.4	2.3 2.5	36.26 36.26	8.01 8.01	3.2
						1.000	16.38	10.09	128.3	1.9	36.1	8.05	
						1.000	16.38	10.09	128.3	1.9	36.09	8.05	4.0
2014/3/12 14:43	W3	MF	832034	807908	11	5.500	16.11	10.18	128.9	1.7	36.28	8.04	2.9
2017121121712	*** 5	1411	032034	007700	11	5.500	16.1	10.06	127.3	1.7	36.3	8.04	2.7
						10.000	15.96 15.98	10.01	126.4 126.6	6 5.9	36.4 36.4	8.02 8.02	2.2
	1					1.000	16.38	8.54	126.6	5.9 2.4	35.51	8.02 8.05	
						1.000	16.37	8.49	106.2	2.4	35.62	8.05	2.1
2014/2/12 15:10	C1	ME	922700	909194	17.6	8.800	16.2	8.44	106.9	2.5	35.99	8.02	3.3
2014/3/12 15:19	C1	MF	833709	808184	17.6	8.800	16.2	8.42	106.6	2.5	35.99	8.03	3.3
						16.600	16.22	8.32	105.5	2.5	36.05	8.02	4.7
						16.600	16.21	8.39	106.3	2.6	36.06	8.01	
						1.000	16.95 16.95	10.38 10.32	133.5 132.8	0.9	36.2 36.21	7.93 7.93	2.7
						5.300	16.12	10.32	132.8	0.9	36.48	7.93	
2014/3/12 14:32	C2	MF	831469	807749	10.6	5.300	16.12	10.37	131.5	1	36.5	7.92	2.3
						9.600	15.94	10.25	129.6	3.3	36.56	7.91	2.2
						9.600	15.95	10.25	129.6	3.4	36.55	7.91	2.2
						1.000	16.38	8.36	106.1	2.1	35.71	8.02	2.8
						1.000	16.39	8.4	106.5	2.1	35.71	8.02	
2014/3/12 15:49	C3	MF	832250	808871	16.8	8.400 8.400	16.17 16.2	8.29 8.31	104.8 105.1	2.7 3.4	35.85 35.86	8.02 8.02	2.6
						15.800	16.2	8.15	103.1	2.7	35.80	8.02	
							10.2	0.15	100.1	2.7	22.71	8.02	3.7

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 15-Mar-14

Date / Time	Location	Tide*	Co-ore	dinates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	Tiuc	East	North	m	m	°C	mg/L	%	NTU	ppt	unit	mg/l
2014/3/15 11:48	W1	ME	832984	807746	2.8	1.400	16.19	8.49	106.6	2.4	34.59	8.13	2.7
						1.400	16.19 16.22	8.49 8.28	106.6 103.9	2.5	34.59 34.57	8.13 8.12	
						1.000	16.22	8.16	103.9	2.4	34.58	8.12	2.9
2014/2/15 11 54	1110) (F)	000000	007000	10.0	6.600	16.2	8.09	101.6	1.9	34.64	8.12	
2014/3/15 11:54	W2	ME	832692	807993	13.2	6.600	16.2	8.07	101.3	1.8	34.64	8.12	5.0
						12.200	16.19	8.01	100.6	2.4	34.67	8.13	2.7
						12.200	16.19	8.01	100.6	2.3	34.67	8.13	
						1.000	16.29 16.29	7.68 6.88	96.5 86.5	1.5 1.5	34.56 34.58	8.11 8.11	4.0
						6.300	16.24	7.17	90.1	1.6	34.67	8.12	
2014/3/15 12:08	W3	ME	832039	807908	12.6	6.300	16.22	7.29	91.6	1.8	34.68	8.13	2.8
						11.600	16.24	7.26	91.2	3.3	34.72	8.12	3.4
						11.600	16.24	7.3	91.7	2.8	34.72	8.12	J.4
						1.000	16.2	8.86	111.1	1.9	34.3	8.21	6.4
						1.000	16.2	8.81	110.5 110.7	2 1	34.39	8.2 8.17	-
2014/3/15 11:33	C1	ME	833709	808184	16	8.000 8.000	16.19 16.2	8.82 8.52	106.9	2.1	34.52 34.53	8.17	6.0
						15.000	16.18	8.59	107.8	3.2	34.63	8.14	
						15.000	16.17	8.66	108.7	3.1	34.64	8.14	2.9
						1.000	16.5	6.62	83.6	1.4	34.65	8.12	3.6
						1.000	16.5	6.73	85	1.4	34.66	8.12	3.0
2014/3/15 12:24	C2	ME	831490	807728	9.5	4.750	16.45	6.84	86.4	1.6	34.71	8.12	3.3
	-		000130			4.750	16.45	6.7	84.5	1.6	34.72	8.13	
						8.500 8.500	16.41 16.4	6.83 6.78	86.1 85.5	2.1	34.75 34.75	8.12 8.12	3.6
						1.000	16.24	10.06	125.9	2.4	33.94	7.97	
						1.000	16.25	10.14	127	2	33.95	7.98	3.7
2014/2/15 11 12	G0.) (F)	000010	000001	16.0	8.400	16.23	10.22	128	2.2	34.09	7.98	4.0
2014/3/15 11:13	C3	ME	832218	808881	16.8	8.400	16.22	10.01	125.3	2.1	34.11	7.99	4.2
						15.800	16.16	9.98	124.9	2.5	34.2	7.99	3.0
						15.800	16.16	9.99	125	2.5	34.21	8	5.0
						1,300	16.24	6.37	80.1	2.5	34.8	8.15	
2014/3/15 17:41	W1	MF	832964	807738	2.6	1.300	16.23	6.47	81.4	2.9	34.81	8.15	5.8
						1.000	16.23	6.25	78.6	2.2	34.76	8.08	
						1.000	16.23	6.45	81.1	2	34.77	8.09	5.0
2014/3/15 17:27	W2	MF	832679	807980	12.4	5.950	16.21	6.42	80.7	1.9	34.87	8.09	3.6
2014/3/13 17.27	W Z	IVIF	632079	607960	12.4	6.200	16.21	6.5	81.7	2.2	34.86	8.09	5.0
						11.400	16.2	6.43	80.9	2.1	34.91	8.09	4.9
						11.400	16.2	6.43	80.9	2.1	34.91	8.09	
						1.000	16.25 16.25	7.14 7.14	89.7 89.7	2.8	34.66 34.68	8.09 8.09	3.6
						5.950	16.24	6.35	79.9	2.2	34.78	8.09	
2014/3/15 17:14	W3	MF	832034	807891	11.9	5.950	16.25	6.4	80.5	2.2	34.78	8.09	3.0
						10.900	16.25	6.6	83	2.4	34.85	8.09	4.0
	1					10.900	16.25	6.62	83.3	2.4	34.85	8.1	4.0
						1.000	16.24	6.04	76	2.2	34.77	8.14	3.9
						1.000	16.24 16.24	6.24	78.4 79.9	2.2	34.78	8.14	
2014/3/15 17:50	C1	MF	833708	808192	15.9	7.950 7.950	16.24	6.35 6.52	79.9	2.1	34.89 34.88	8.14 8.14	3.3
						14.900	16.24	6.41	80.7	2.1	34.94	8.15	
						14.900	16.25	6.41	80.8	2	34.94	8.15	3.0
						1.000	16.51	7.1	89.6	1.2	34.65	8.08	2.5
						1.000	16.51	7	88.5	1.2	34.65	8.08	2.3
2014/3/15 17:03	C2	MF	831469	807754	10.4	5.200	16.44	6.78	85.7	1.7	34.77	8.08	2.4
						5.200	16.44	6.8	85.9	1.8	34.77	8.08	
						9.400 9.400	16.4 16.4	6.81	85.9 87.2	2.3	34.81 34.81	8.08 8.07	3.1
	1					1.000	16.25	6.58	82.8	2	34.81	8.07	
						1.000	16.25	6.58	82.8	2	34.82	8.15	3.8
2014/2/15 10 12	C2) (C	020000	900001	16.4	8.200	16.24	6.7	84.3	1.9	34.92	8.16	2.0
2014/3/15 18:13	C3	MF	832228	808881	16.4	8.200	16.24	6.65	83.8	2	34.92	8.15	3.8
						15.400	16.24	6.55	82.5	2	34.96	8.15	3.5
	1	l				15.400	16.24	6.58	82.8	2	34.96	8.15	ر.ر

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 18-Mar-14

Date / Time	Location	Tide*	Co-ore	dinates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	Tide.	East	North	m	m	${\mathfrak C}$	mg/L	%	NTU	ppt	unit	mg/l
2014/3/18 13:59	W1	ME	832963	807739	2.5	1.250	16.79	7.86	100.9	2.2	36.42	7.98	2.0
						1.250	16.68 16.9	7.51 8.27	96.2 106.6	1.8	36.4 36.65	7.94 7.92	
						1.000	16.84	8.21	105.7	1.3	36.65	7.91	3.6
2014/3/18 13:48	W2	ME	832692	807982	11	5.500	16.52	7.57	96.7	1.9	36.37	7.86	4.1
2014/3/16 13.46	W Z	IVIE	632092	007902	11	5.500	16.52	7.65	97.8	1.9	36.62	7.85	4.1
						10.000	16.46 16.46	7.48 7.45	95.6 95.3	1.9	36.75 36.76	7.84 7.83	3.0
						1.000	17.29	7.43	101.8	1.9	36.86	7.83	
						1.000	17.25	7.85	102	1	36.86	7.78	3.7
2014/3/18 13:32	W3	ME	832036	807897	10.4	5.200	16.58	7.93	101.8	1.5	37.03	7.78	4.4
2014/3/10 13.32	***5	IVIL	032030	00/07/	10.4	5.200	16.56	7.98	102.3	1.6	37.06	7.77	7.7
						9.400	16.54 16.54	7.8 7.75	100.1 99.4	1.9 2.3	37.05 37.05	7.78 7.78	2.6
						9.400 1.000	17.03	6.94	99.4 89.5	1.3	36.4	7.78	
						1.000	17.04	6.97	89.9	1.3	36.37	7.88	3.0
2014/3/18 14:07	C1	ME	833692	808192	15.4	7.700	16.84	6.87	88.4	1.8	36.47	7.86	3.0
2014/3/10 14.0/	CI	IVIL	033092	000192	13.4	7.700	16.76	6.93	89	2.4	36.5	7.85	5.0
						14.400 14.400	16.63 16.62	6.82	87.4 87	1.9 1.9	36.54 36.52	7.83 7.82	2.7
						1.000	16.93	8.8	113.7	1.9	37.03	7.66	
						1.000	16.91	8.82	113.9	0.9	37.03	7.66	3.2
2014/3/18 13:19	C2	ME	831469	807761	8.8	4.400	16.57	8.25	105.9	1.8	37.05	7.72	3.1
2014/3/10 13.19	CZ	IVIL	031409	607701	0.0	4.400	16.57	8.24	105.8	1.8	37.05	7.72	J.1
						7.800	16.52 16.52	8.21 8.1	105.4 103.8	1.9 1.9	37.1 37.08	7.73 7.73	3.6
						7.800 1.000	17.09	7.66	98.9	1.9	36.29	7.73	
						1.000	17.09	7.65	98.7	1.5	36.3	7.82	2.6
2014/2/19 14-22	CO	ME	022220	000076	16	8.000	16.84	6.72	86.4	2.2	36.43	7.82	2.1
2014/3/18 14:22	C3	ME	832228	808876	16	8.000	16.82	6.68	85.9	2.2	36.45	7.82	2.1
						15.000	16.59	6.68	85.4	2.1	36.48	7.82	3.2
						15.000	16.58	6.66	85.2	2	36.47	7.82	
						1.300	17.04	8.84	112.6	1	34.2	8.08	
2014/3/18 9:00	W1	MF	832967	807744	2.6	1.300	17.01	8.78	111.7	1	34.24	8.08	3.1
						1.000	16.6	8.61	108.8	1.8	34.43	8.07	4.2
						1.000	16.53	8.63	109	2.4	34.43	8.07	4.2
2014/3/18 9:06	W2	MF	832692	807991	12.6	6.150	16.44	8.46	106.6	2.4	34.44	8.06	3.1
						6.300 11.600	16.43 16.43	8.55 8.13	107.7 102.5	2.4	34.49 34.49	8.06 8.06	
						11.600	16.43	8.08	101.9	2.7	34.51	8.05	4.1
						1.000	16.94	7.83	99.7	3.9	34.48	7.93	2.5
						1.000	17	7.84	99.9	3.7	34.52	7.93	2.3
2014/3/18 9:24	W3	MF	832056	807892	12.3	6.150	16.72	7.74	98.1	1.6	34.5	7.91	2.8
						6.150 11.300	16.72 16.46	7.64 7.56	96.8 95.3	1.2 3.8	34.52 34.56	7.9 7.9	
						11.300	16.46	7.54	95.1	3.6	34.57	7.9	3.6
						1.000	16.4	8.18	102.9	2.2	34.28	8	2.0
						1.000	16.4	7.95	99.9	2.2	34.29	8.01	3.2
2014/3/18 8:44	C1	MF	833708	808179	16.8	8.400	16.33	7.59	95.3	3.1	34.23	8.02	5.2
						8.400 15.800	16.33 16.33	7.63 7.63	95.9 95.9	3.7 7.4	34.28 34.31	8.02 8.03	
						15.800	16.33	7.36	93.9	5.4	34.31	8.05	3.4
						1.000	17.16	8.47	108.3	0.7	34.61	7.99	2.4
						1.000	17.15	8.21	105	0.7	34.58	7.98	3.4
2014/3/18 9:38	C2	MF	831468	807764	10.4	5.200	16.62	7.76	98.3	0.7	34.61	7.92	3.0
						5.200 9.400	16.61 16.4	7.84 7.53	99.2 94.8	0.7	34.58 34.61	7.91 7.88	
						9.400	16.4	7.55	94.8	1.3	34.62	7.88	3.5
						1.000	16.4	8.25	103.8	2.1	34.22	7.97	2.4
						1.000	16.39	8.16	102.6	2.1	34.22	7.97	2.4
2014/3/18 8:25	C3	MF	832229	808876	16.3	8.150	16.33	8	100.4	3.2	34.2	7.97	2.8
						8.150 15.300	16.33 16.33	8.07 8.24	101.3 103.5	3.1 5.6	34.2 34.2	7.98 7.98	
							10 11	× /4	103.5	5.6	54.2	7.98	3.1

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 20-Mar-14

Date / Time	Location	Tide*	Co-ore	dinates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	Hue.	East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2014/3/20 17:42	W1	ME	832961	807729	2.7	1.350	16.85	7.02	89.1	0.9	34.27	8.06	2.7
						1.350	16.85	7.25 7.39	92 93.8	0.8	34.28 34.25	8.06	
						1.000	16.85 16.85	7.39	93.8	0.8	34.25	8.05 8.05	2.4
						6.550	16.83	7.11	90.2	0.9	34.27	8.05	
2014/3/20 17:27	W2	ME	832689	807999	13.1	6.550	16.83	7.06	89.5	0.8	34.28	8.06	4.3
						12.100	16.82	7.18	91.1	1	34.29	8.05	3.8
						12.100	16.82	7.09	89.9	1	34.29	8.06	5.0
						1.000	16.84	8.22	104.2	1.2	34.23	8.04	3.5
						1.000	16.84	8.17 7.29	103.6 92.5	1.1 0.9	34.23 34.25	8.04 8.04	
2014/3/20 17:14	W3	ME	832065	807906	12.6	6.300	16.83 16.83	7.43	94.2	0.9	34.25	8.04	2.8
						11.600	16.81	7.43	92.1	1.3	34.27	8.05	
						11.600	16.81	7.27	92.1	1.2	34.27	8.05	2.4
						1.000	16.85	6.97	88.4	0.9	34.28	8.06	2.0
						1.000	16.85	6.98	88.6	1.2	34.28	8.06	2.0
2014/3/20 17:49	C1	ME	833709	808179	16.2	8.100	16.84	6.81	86.4	0.9	34.3	8.07	3.0
			000.03			8.100	16.83	7.14	90.6 85	0.9	34.31	8.06	
						15.200 15.200	16.82 16.82	6.7 6.7	85	0.9	34.32 34.32	8.06 8.06	3.5
						1.000	16.84	7.6	96.4	1.8	34.21	8.03	
						1.000	16.85	7.6	96.4	1.7	34.21	8.03	2.8
2014/2/20 17 02	G0	ME	021460	007720	10.4	5.200	16.82	7.55	95.7	0.9	34.23	8.03	2.0
2014/3/20 17:02	C2	ME	831469	807728	10.4	5.200	16.82	7.43	94.2	0.9	34.24	8.04	2.6
						9.400	16.82	7.56	95.8	0.8	34.25	8.04	2.8
						9.400	16.83	7.48	94.8	0.9	34.25	8.04	2.0
						1.000	16.83	7	88.8	0.9	34.3	8.07	2.8
						1.000 8.200	16.84 16.82	6.85	86.9 83.5	0.8	34.3 34.33	8.07 8.07	
2014/3/20 18:19	C3	ME	832224	808882	16.4	8.200	16.82	6.7	84.9	0.8	34.33	8.07	3.2
						15.400	16.82	6.55	83.1	0.9	34.34	8.07	
						15.400	16.82	6.54	83	0.9	34.34	8.07	3.6
2014/3/20 8:40	W1	MF	832947	907724	2.8	1.400	16.84	8.8	111.5	0.8	34.11	7.98	3.0
201 1/3/20 0.10	,,,,	1411	032) 11	J01121	2.0	1.400	16.84	8.56	108.5	0.7	34.12	7.99	5.0
						1.000	16.84 16.84	8.59 8.27	108.9 104.8	0.7 1.4	34.13 34.13	7.99 7.99	3.2
						1.000 6.000	16.83	8.24	104.6	1.4	34.15	7.99	
2014/3/20 8:48	W2	MF	832672	807995	12.8	6.400	16.83	8.18	103.6	1.3	34.15	7.99	2.9
						11.800	16.82	8.25	104.5	0.9	34.18	8	2.0
						11.800	16.82	8.06	102.1	0.8	34.18	8	2.9
						1.000	16.84	8.23	104.4	0.8	34.17	8.01	2.0
						1.000	16.84	8.11	102.8	0.8	34.17	8.01	2.0
2014/3/20 9:02	W3	MF	832059	807908	12	6.000	16.83	7.79	98.8	0.7	34.19	8.01 8.01	3.5
						6.000	16.82 16.81	7.8 7.75	98.8 98.2	0.8	34.19 34.21	8.01	
						11.000	16.82	7.75		0.8	34.21	8.01	4.7
						1.000	16.84	9.32	118.1	0.8	34.04	7.96	2.0
						1.000	16.84	9.2	116.5	0.8	34.04	7.96	2.9
2014/3/20 8:31	C1	MF	833701	808180	15.7	7.850	16.83	8.88	112.5	0.8	34.06	7.96	2.3
201 ,, 2, 20 0, 21	0.1	1.11	033701	000100	13.7	7.850	16.83	8.91	112.9	0.8	34.08	7.97	
						14.700 14.700	16.81 16.81	8.66 9.01	109.7 114.1	0.9	34.11 34.12	7.97 7.98	2.1
	1					1.000	16.85	7.87	99.8	0.9	34.12	7.98 8.02	
						1.000	16.85	7.78	99.8	0.8	34.19	8.02	2.7
2014/2/20 0 14) ATC	021460	907769	0.0	4.900	16.83	7.56	95.8	0.8	34.2	8.03	2.7
2014/3/20 9:14	C2	MF	831469	807768	9.8	4.900	16.84	7.6	96.4	0.9	34.2	8.03	2.7
						8.800	16.83	7.53	95.5	1	34.22	8.03	2.8
						8.800	16.83	7.56	95.9	1	34.22	8.03	۷.0
						1.000	16.84	9.92	125.5	0.8	33.86	7.94	2.3
						1.000	16.84	10.26	129.8	0.8	33.86	7.94 7.95	
2014/3/20 8:17	C3	MF	832221	807852	15.9	7.950 7.950	16.83 16.83	9.67 9.74	122.5 123.3	0.8 0.7	33.97 33.98	7.95 7.95	3.0
	1					14.900	16.81	9.74	123.3	0.7	34.03	7.95	
													2.5

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 22-Mar-14

Date / Time	Location	Tide*	Co-ore	linates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
Date / Time	Location	11de+	East	North	m	m	°C	mg/L	%	NTU	ppt	unit	mg/
2014/3/22 16:09	W1	ME	832964	807751	2.8	1.400	17.07	6.37	81.4	1.2	34.69	8.03	3,9
2014/3/22 10:07	***1	IVIL	032704	007731	2.0	1.400	17.08	6.39	81.7	1.2	34.69	8.03	5.7
						1.000	16.93	6.26	79.7	0.8	34.64	7.99	3.6
						1.000 6.200	16.93 16.89	6.23	79.4 74.2	0.7	34.64 34.66	7.99 7.98	
2014/3/22 15:55	W2	ME	832653	807949	12.4	6.200	16.89	5.83 5.83	74.2	0.7	34.65	7.98	4.0
						11.400	16.82	5.8	73.7	1.1	34.03	7.98	
						11.400	16.82	5.81	73.9	1.4	34.73	7.98	5.2
						1.000	16.99	6.12	77.9	1	34.5	8.06	0.7
						1.000	16.99	6.12	77.9	0.9	34.51	8.06	3.3
2014/3/22 15:38	W3	ME	832024	807883	11.4	5.700	16.91	5.93	75.5	0.9	34.61	8.06	4.:
2014/3/22 13.36	W 3	IVIL	032024	007003	11.4	5.700	16.91	5.94	75.6	0.9	34.58	8.06	4
						10.400	16.83	5.97	75.8	3.1	34.64	8.06	3.2
						10.400	16.82	6.05	77	3.4	34.64	8.06	J.,
						1.000	16.94	5.64	71.9	0.5	34.66	8	3.
						1.000	16.94	5.75	73.2	0.5	34.65	8	
2014/3/22 16:20	C1	ME	833698	808165	15.9	7.950 7.950	16.83	5.65 5.7	71.9 72.6	1.1	34.71 34.77	8 8	4.2
						14.900	16.79	5.65	71.8	1.4	34.77	8	
						14.900	16.79	5.62	71.6	1.3	34.77	8.01	3.
						1.000	17.05	7.14	91	2.2	34.4	8.05	
						1.000	17.05	6.71	85.5	1.7	34.39	8.05	2.9
2014/2/22 15 20	GO.) (F)	001450	007704	0.0	4.900	16.98	6.45	82.2	0.4	34.55	8.04	2.
2014/3/22 15:28	C2	ME	831458	807724	9.8	4.900	16.98	6.52	83.1	0.3	34.53	8.04	3.1
						8.800	16.99	6.63	84.5	2.3	34.61	8.04	3.
						8.800	16.99	6.52	83.2	2.3	34.59	8.04	٥.
						1.000	16.9	5.6	71.3	0.7	34.68	8.01	2.
						1.000	16.92	5.74	73.1	0.7	34.67	8.01	
2014/3/22 16:38	C3	ME	832213	808841	16.2	8.100	16.83	5.63	71.6	1	34.72	8.02	2.0
						8.100	16.83	5.67	72.1	1.1	34.69	8.02	
						15.200	16.8 16.79	5.58 5.73	70.9 72.9	1.1	34.73 34.76	8.03 8.03	4.0
						15.200	10.79	3.13	12.9	1.2	34.70	0.03	
						1.300	16.96	5.68	72.2	1.8	34.34	7.97	
2014/3/22 9:17	W1	MF	832942	907709	2.6	1.300	16.95	5.74	73	1.8	34.33	7.97	2.:
						1.000	16.88	5.79	73.6	0.8	34,43	7.96	
						1.000	16.88	5.74	73	0.7	34.42	7.96	2.6
2014/2/22 0-22	W2	ME	022602	007040	10.0	5.800	16.87	5.75	73	0.6	34.45	7.97	2.9
2014/3/22 9:22	W Z	MF	832692	807948	12.8	6.400	16.86	5.54	70.4	0.6	34.47	7.98	Z.;
						11.800	16.84	5.48	69.6	0.8	34.48	7.98	3.
						11.800	16.84	5.54	70.4	0.8	34.49	7.98	٥.
						1.000	16.96	5.43	69.1	0.7	34.46	8.07	2.5
						1.000	16.96	5.43	69.1	0.7	34.45	8.07	
2014/3/22 9:41	W3	MF	832027	807886	11.6	5.800 5.800	16.89	5.39 5.32	68.6 67.7	0.9 0.9	34.5 34.52	8.07 8.08	2.6
						10.600	16.9 16.83	5.32	68.5	3.5	34.52	8.08	
						10.600	16.82	5.39	68.5	3.8	34.56	8.08	3.0
						1.000	16.83	6.33	80.3	1.1	34.34	8.08	
						1.000	16.84	6.42	81.5	1.1	34.34	8.08	2.0
2014/3/22 9:04	C1	MF	833693	808183	15.5	7.750	16.82	6.64	84.2	1	34.36	8.08	2.0
2014/3/22 9:04	CI	IVII	655095	600183	13.3	7.750	16.82	6.19	78.6	0.9	34.37	8.08	۷.۱
						14.500	16.82	6.21	78.7	1	34.38	8.08	3.:
	1					14.500	16.82	6.18	78.4	0.9	34.38	8.08	٦.
						1.000	17.06	7.25	92.4	1.1	34.38	8.04	3.4
						1.000	17.06	7.42	94.5	1.1	34.4	8.03	
2014/3/22 9:55	C2	MF	831469	807748	10.6	5.300	16.98 16.98	7.12 7.09	90.7	0.4	34.51 34.52	8.03 8.03	3.
						9.600	16.98	7.09	90.3	3.3	34.52 34.58	8.03 8.04	
						9.600	17.01	7.08	90.3	3.5	34.58	8.04	3.0
						1.000	16.85	6.64	84.3	1.2	34.32	8.07	
						1.000	16.85	6.92	87.8	1.2	34.32	8.07	2.0
2011/2/27			005	005		8.300	16.82	6.43	81.5	1.2	34.35	8.07	
2014/3/22 8:44	C3	MF	832228	807884	16.6	8.300	16.82	6.5	82.4	1	34.35	8.08	3.2
						15.600	16.82	6.53	82.9	1.1	34.36	8.08	4.0
	i l					15.600	16.82	6.4	81.2	1	34.36	8.08	4.8

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

AUES

Sok Kwu Wan

Date 24-Mar-14

Description Description	Date / Time	Location	Tide*	Co-ore	dinates	Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pН	SS
2014/3/24 18:00 W1 MB 83.944 80/199 2/7 13:80 17.77 \$5.97 77 0.3 34.15 8.05 1.00 17.78 5.07 77 0.1 34.28 8.06 1.00 17.78 5.07 77 0.1 34.28 8.06 1.00 17.78 5.00 78.5 0.3 34.1 8.07 1.00 17.78 5.07 1.00 17.78 5.00 17.78 5.00 3 34.1 8.07 1.00 17.78 5.00 17.78 5.00 3 34.1 8.07 1.00 17.78 5.00 17.78 5.00 3 34.1 8.07 1.00 17.78 5.00 17.78 5.00 3 34.1 8.07 1.00 17.78 5.00 17.78 5.00 3 34.1 8.07 1.00 17.78 5.00 17.78 5.00 17.78 5.00 3 34.1 8.07 1.00 17.78 5.00 17.78	Date / Time	Location	Tiue.	East	North	m	m	°C	mg/L	%	NTU	ppt	unit	mg/l
2014/3/24 17:35 W2 ME 82392 807981 12.2	2014/3/24 17:50	W1	ME	832947	807739	2.7								2.9
2014/3/24 17:35 W2 ME \$33902 \$67984 12.2														
2014/3/24 17:35 W2 ME 832692 80784 12.2 \(\begin{array}{c c c c c c c c c c c c c c c c c c c														3.1
1,200 1,27 5.98 7.69 0.1 54,2 5.86 1,200 1,27 5.98 7.69 0.1 54,2 5.86 1,200 1,27 5.98 7.69 1.3 5.81 5.00 1,200 1,27 5.98 7.69 0.1 54,2 5.00 1,200 1,27 5.98 7.69 0.1 54,2 5.00 1,200 1,27 5.98 7.69 0.1 54,2 5.00 1,200 1,27 5.18 7.92 0.3 54,1 5.00 1,200 1,27 5.18 7.92 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,27 5.98 7.69 0.3 54,1 5.00 1,200 1,200 1,200 1,200 5.90 7.74 0.0 54,1 5.00 1,200 1,200 1,200 1,200 5.90 7.74 0.0 54,1 5.00 1,200 1,200 1,200 1,200 5.90 7.74 0.0 54,1 5.00 1,200 1,200 1,200 1,200 1,200 5.90 7.74 0.0 54,1 5.00 1,200 1,200 1,200 1,200 5.90 7.75 0.0 5.90 1,200 1,200 1,200 1,200 5.90 7.73 0.0 54,1 5.00 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1,200 1	2014/2/04 17-25	WO	ME	922602	907094	12.2								3.5
20143/24 17:19 W3 ME 832034 807894 11.2 11.200 17.71 5.15 79.2 0.3 34.11 8.094 20143/24 17:19 W3 ME 832034 807894 11.2 5.600 17.60 0.15 79.2 0.3 34.11 8.094 20143/24 18:03 C1 ME 832034 807894 11.2 5.600 17.60 0.15 77.6 0.2 34.22 8.005 10.200 17.50 6.013 77.6 0.2 34.22 8.005 10.200 17.50 6.013 77.13 0.3 34.17 8.005 10.200 17.50 6.013 77.13 0.3 34.17 8.005 10.200 17.50 5.09 77.1 0.2 34.22 8.006 10.200 17.50 5.09 77.1 0.2 34.22 8.006 10.200 17.50 5.09 77.1 0.2 34.22 8.006 10.200 17.50 5.09 77.1 0.2 34.22 8.006 10.200 17.50 5.09 77.1 0.2 34.22 8.006 10.200 17.50 5.09 77.1 0.2 34.22 8.006 10.200 17.50 5.09 77.1 0.2 34.22 8.006 10.200 17.70 5.09 77.1 0.2 34.22 8.006 10.200 17.70 5.09 77.1 0.3 34.17 8.005 10.200 17.70 17.56 5.84 75.22 0.1 34.22 8.006 10.200 17.70 17.56 5.84 75.22 0.1 34.22 8.006 10.200 17.70 17.56 5.84 75.22 0.1 34.22 8.007 10.20143/24 17.04 C2 ME 831469 807716 9.8 10.00 17.76 6.25 80.2 0.0 34.14 8.00 10.20143/24 17.04 C2 ME 831469 807716 9.8 40.00 17.76 6.25 80.2 0.0 34.14 8.00 10.20143/24 18.22 C3 ME 832228 80881 15.8 15.8 10.00 17.76 6.25 80.2 0.0 34.14 8.00 10.20143/24 18.22 C3 ME 832228 80881 15.8 10.00 17.76 6.25 80.2 0.0 34.15 8.00 10.20143/24 18.22 C3 ME 832228 80881 15.8 10.00 17.76 6.25 80.2 0.0 34.15 8.00 10.20143/24 18.22 C3 ME 832228 80881 15.8 10.00 17.76 6.25 80.2 0.0 34.15 8.00 10.20143/24 18.22 C3 ME 832228 80881 15.8 10.00 17.76 6.25 80.2 0.0 34.15 8.00 10.20143/24 18.22 C3 ME 832228 80881 15.8 10.00 17.76 6.25 80.2 0.0 34.15 8.00 10.20143/24 18.22 C3 ME 832228 80881 15.8 10.00 17.76 6.25 80.2 0.0 34.15 8.00 10	2014/3/24 17:33	W Z	ME	832092	807984	12.2								3.3
2014/3/24 17:19 W3 ME 833084 807894 11.2														3.7
2014/3/24 11:10 W3 ME 832034 807894 11.2 1.000 17.71 6.15 70.2 0.3 34.11 8.01 5.600 17.60 6.05 77.6 77.1 0.2 34.2 8.05 5.600 17.60 5.59 77.1 0.2 34.2 8.05 5.600 17.60 5.59 77.1 0.2 34.2 8.05 5.600 17.60 5.59 77.1 0.2 34.2 8.05 5.600 17.60 5.59 77.1 0.2 34.2 8.05 5.600 17.60 5.59 77.1 0.2 34.2 8.05 5.600 17.60 5.59 77.1 0.2 34.2 8.05 5.600 17.60 5.59 76.1 0.2 34.2 8.05 5.600 17.76 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.17 8.05 5.600 17.60 5.59 76.1 0.2 34.16 8.07 5.600 17.60 5.59 76.1 0.2 34.16 8.07 5.600 17.60 5.59 76.1 0.2 34.16 8.07 5.600 17.60 5.59 76.1 0.2 34.2 8.07 5.600 17.60 5.59 76.1 0.2 34.2 8.07 5.600 17.70 17.55 5.59 76.1 0.2 34.2 8.07 5.600 17.70 17.50 5.59 76.1 0.2 34.2 8.07 5.600 17.70 17.50 5.59 76.1 0.2 34.2 8.07 5.600 17.70 17.70 17.70 5.50 0.2 34.11 8.01 5.600 17.70 17.70 17.70 17.70 17.70 17.70 5.600 17.70 17.70 17.70 17.70 17.70 5.600 17.70 17.70 17.70 17.70 5.600 17.70 17.70 17.70 17.70 5.600 17.70 17.70 17.70 17.70 5.600 17.70 17.70 17.70 5.600 17.70 17.70 17.70 5.600 17.70 17.70 17.70 5.600 17.70 17.70 17.70 5.600 17.70 17.70 17.70 5.600 17.70 17.70 17.70 5.600 17.70 17.70 17.70 5.600 17.70 17.70 17.70 5.600 17.70 17.70 17.70 5.600 17.70 17.70 5.600 17														
2014/3/24 11:40 W3 ME 832084 807894 11.2														3.1
20145/24 11:30 W1 MF 833708 808179 15.8 10.00 17.75 17.5 17.5 17.5 17.5 17.5 18.05 17.75 18.05 10.00 17.75 17.75 18.05 17.75 18.05	2014/2/24 17 10	1110	ME	022024	007004	11.0								2.0
2014/3/24 11:10 W1 MF 83291 807716 2014/3/24 11:10 W1 MF 83292 80884 2014/3/24 11:10 W3 MF 83292 807894 2014/3/24 11:10 W3 MF 83291 807716 2014/3/24 11:10 W3 MF 83209 807894 2014/3/24 11:10 W3 MF 83300 80749 2014/3/24 11:10 W3 MF 83209 807894 2014/3/24 11:	2014/3/24 17:19	W 3	ME	832034	807894	11.2	5.600	17.61	5.99	77.1	0.2	34.21	8.05	3.8
2014/3/24 18:03 C1 ME 835709 808179 15.4 1,000 17.76 5.9 76.1 0.2 34.17 805 1,000 17.76 5.9 76.1 0.2 34.17 805 1,000 17.76 5.89 76.0 0.3 34.15 805 1,000 17.76 5.88 75.2 0.1 34.26 807 1,700 17.56 5.87 75.4 0.2 34.16 807 1,000 17.73 5.89 76.0 0.3 34.15 805 1,000 17.76 5.87 75.4 0.2 34.16 807 1,000 17.73 5.89 76.0 0.3 34.26 807 1,000 17.73 5.89 76.0 0.3 34.26 807 1,000 17.73 5.89 74.9 0.0 34.26 807 1,000 17.76 5.25 807 74.9 0.0 34.41 808 1,000 17.77 6.12 80.4 0.2 34.11 802 1,000 17.76 6.23 804 0.2 34.11 802 1,000 17.76 6.23 804 0.2 34.11 802 1,000 17.76 6.26 807 74.9 0.3 34.11 802 1,000 17.76 6.26 80.7 80.4 0.2 34.14 804 1,000 17.76 6.26 80.7 80.4 0.2 34.14 804 1,000 17.79 6.17 79.5 0.2 34.14 804 1,000 17.79 6.17 79.5 0.2 34.14 804 1,000 17.79 6.17 79.5 0.2 34.15 805 1,000 17.79 6.17 79.5 0.2 34.15 805 1,000 17.79 6.17 79.5 0.2 34.15 805 1,000 17.79 79.5 79.5 0.2 34.15 805 1,000 17.79 79.5 79.5 79.5 0.2 34.15 805 1,000 17.79 79.5 79.5 79.5 0.2 34.15 805 1,000 17.79 79.5 79.5 79.5 0.2 34.15 805 1,000 17.79 79.5 79.5 79.5 0.2 34.15 805 1,000 17.79 79.5 79.5 79.5 0.2 34.15 805 1,000 17.79 79.5 79.5 79.5 0.3 34.10 805 1,000 17.79 6.48 8.49 0.2 34.00 79.9 1,000 17.79 6.48 8.49 0.2 34.00 805 1,000 17.79 6.48 8.49 0.2 34.00 805 1,000 17.79 6.48 8.49 0.2 34.00 805 1,000 17.79 6.48 8.45 0.3 34.00 805 1,000 17.79 6.48 8.45 0.3 34.00 805 1,000 17.79 6.48 8.45 0.3 34.00 805 1,000 17.79 6.48 8.45 0.3 34.00 805 1,000 17.79 6.48 8.45 0.3 34.10 805 1,000 17.79 6.48 8.45 0.3 34.10 805 1,000 17.79 6.48 8.45 0.3 34.10 805 1,000 17.79 6.48														4.8
2014/3/24 18:03 C1 ME 833709 808179 15.4														
2014/3/24 18:03 C1 ME 83709 808179 15.4 7.700 17.56 S.84 75.2 0.1 34.26 8.07 7.700 17.56 S.87 75.5 0.2 34.26 8.07 14.400 17.43 S.81 74.6 0.6 34.4 8.08 8.07 14.400 17.43 S.81 74.6 0.6 34.4 8.08 14.400 17.43 S.81 74.6 0.6 34.4 8.08 14.400 17.43 S.81 74.6 0.6 34.4 8.08 14.400 17.47 6.25 80.7 0.7 34.41 8.08 14.400 17.77 6.25 80.7 0.3 34.11 8.03 14.400 17.77 6.25 80.4 0.2 34.11 8.03 14.400 17.77 6.25 80.4 0.2 34.11 8.03 14.400 17.77 6.15 79.2 0.2 34.14 8.04 14.400 17.77 6.15 79.2 0.2 34.14 8.04 14.400 17.77 6.15 79.2 0.2 34.14 8.04 14.400 17.77 6.17 79.5 0.2 34.14 8.04 14.400 17.77 6.17 79.5 0.2 34.14 8.04 14.400 17.77 6.17 79.5 0.2 34.14 8.04 14.400 17.77 6.17 79.5 0.2 34.14 8.04 14.400 17.77 6.17 79.5 0.2 34.14 8.04 14.400 17.47 6.17 79.5 0.2 34.14 8.04 14.400 17.47 6.17 79.5 0.2 34.14 8.05 14.400 17.47 6.17 79.5 0.2 34.14 8.05 14.400 17.47 6.17 79.5 0.2 34.15 8.05 14.40 14.400 17.47 6.17 79.5 0.2 34.15 8.05 14.40 14.400 17.47 6.17 79.5 0.2 34.15 8.05 14.40 14.400 17.47 6.17 79.5 0.2 34.15 8.05 14.40 14.400 17.47 6.17 79.5 14.40 14														2.7
1.00														
14,400	2014/3/24 18:03	C1	ME	833709	808179	15.4								3.4
2014/3/24 11:30 W1 MF 83298 807916 2014/3/24 11:30 W3 MF 832039 807894 2014/3/24 11:30 W3 MF 832039 807894 2014/3/24 11:30 W3 MF 832039 807894 2014/3/24 11:30 W3 MF 832039 807894 2014/3/24 11:30 W3 MF 832039 807894 2014/3/24 11:30 W3 MF 832039 807894 2014/3/24 11:30 W3 MF 832039 807894 2014/3/24 11:30 W3 MF 832039 807894 2014/3/24 11:30 W3 MF 83308 808179 16.8 8000 17.78 6.15 79.2 0.2 34.14 8.04 4.900 17.7 6.15 79.2 0.2 34.14 8.04 4.900 17.7 6.15 79.5 0.2 34.14 8.04 8.800 17.748 6.09 78.3 0.4 34.22 8.05 1.000 18.06 5.92 76.9 0.2 34.15 8.05 1.000 18.06 5.92 76.9 0.2 34.15 8.05 1.000 18.06 5.92 77.3 0.1 34.12 8.05 7.900 17.66 5.79 74.5 0.1 34.28 8.07 1.4800 17.743 5.71 73.3 0.5 34.43 8.08 1.4800 17.743 5.71 73.3 0.5 34.44 8.08 2014/3/24 11:16 W2 MF 832692 807980 12.8 1.300 17.81 6.54 84.3 0.3 34.05 8 1.000 17.82 6.58 84.9 0.2 34.02 7.99 4.000 17.84 6.54 84.5 0.3 34.06 8 1.000 17.85 6.54 84.5 0.3 34.06 8 1.000 17.80 6.59 85 0.2 34.00 8 2.014/3/24 11:30 W3 MF 832039 807894 12.1 6.050 17.57 6.4 82.2 0.3 34.13 8.02 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.78 6.43 83 0.4 34.03 8.01 1.1000 17.79 6.37 86.8 0.3 33.36 7.99 2014/3/24 11:41 C2 MF 833708 808179 16.8 8.400 17.55 6.59 88.0 0.3 33.35 7.99 2014/3/24 11:41 C2 MF 83469 80749 16.6 8800 17.55 6.52 80.3 0.3 34.22 8.03 2014/3/24 11:41 C2 MF 83469 80749 16.6 8800 17.55 6.22 80.3 0.3 34.22 8.03 2014/3/24 11:41 C2 MF 83469 80749 16.8 80800 17.56 6.25 80.3 0.3 34.23 8.00 2014/3/24 11:41 C2 MF 83469 80749 10.6 8300 17.55 6.22 80.0 0.7 33.84 7.99 0.7 33.84 7.99 0.7 33.84 7.99 0.7 33.84 7.99 0.7 33.84 7.99 0.7 33.84 7.99 0.7 33.84 7.99 0.7 33.84 7.99 0.7 33.84 7.99 0.7 33.84 7.99 0.7 33.84 7.99 0.7							14.400	17.43		74.6	0.6	34.4		4.1
2014/3/24 11:30 W3 MF 83292 807894 2014/3/24 11:30 W3 MF 832981 807894 2014/3/24 11:30 W3 MF 83298 80889 80889														4.1
2014/3/24 11:30 **ME*** 831469** 807716** 9.8 ** **B31469** 807716** 9.8 ** **A900*** 17.7 ** **A900*** 17.8 ** **A900*** 17.8 ** **A900*** 17.8 ** **A900*** 17.8 ** **A900*** 17.8 ** **A900*** 17.7 ** **A900*** 17.8 ** **A900*** 17.7 ** **A900*** 17.8 ** **A900*** 17.7 ** **A900*** 17.8 ** **A900*** 17.7 ** **A900*** 17.8 ** **A900*** 17.7 ** **A900*** 17.8 ** **A900*** 17.7 ** **A900*** 17.8 ** **A900*** 17.7 ** **A900*** 17.8 ** **A900*** 17.7 ** **A900***														3.1
2014/3/24 11:30 W3 MF 83209 80716 M8 83227 80880 17.49 6.08 77.5 6.1 77.5 6.1 8.20 3.41.2 8.05														
2014/3/24 11:30 W3 MF 83209 807894 12.1 83209 807894 12.1 83209 807894 12.1 83209 807894 12.1 60500 17.59 6.39 8.30	2014/3/24 17:04	C2	ME	831469	807716	9.8								3.0
2014/3/24 11:40 W1 MF 83298 807816 12.8 807980 12.8 807894 12.1 1800 17.45 6.35 81.5 0.6 34.25 8.03 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.10 8.05 1.000 17.75 6.45 82.3 0.2 34.14 8.02 1.000 17.75 6.45 82.3 0.2 34.14 8.02 1.000 17.75 6.45 82.3 0.2 34.14 8.02 1.000 17.75 6.45 82.3 0.2 34.14 8.02 1.000 17.75 6.45 82.3 0.2 34.14 8.02 1.000 17.75 6.45 82.3 0.2 34.14 8.02 1.000 17.75 6.45 82.3 0.2 34.14 8.02 1.000 17.75 6.45 82.3 0.2 34.14 8.02 1.000 17.75 6.45 82.3 0.2 34.18 8.03 1.000 17.75 6.45 82.3 0.2 34.18 8.03 1.000 17.75 6.45 82.3 0.3 34.18 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 34.2 8.03 1.000 17.75 6.45 82.4 0.9 3														
2014/3/24 18-22 C3 ME 832228 80881 15.8														3.0
2014/3/24 11:40 **ME*** 832228*** 808881*** 15.8*** 15.8*** 1.000*** 17.61** 15.79*** 17.5** 0.2** 134.21** 8.05** 17.900*** 17.61** 15.79** 17.45** 0.1** 134.28** 8.07** 17.900*** 17.57** 17.90** 17.57** 17.90** 17.57** 17.30** 0.5** 134.43** 8.08** 14.800*** 17.43** 15.71** 17.33** 0.5** 134.43** 8.08** 14.800** 17.43** 15.71** 17.33** 0.5** 134.43** 8.08** 14.800** 17.43** 15.71** 17.33** 0.5** 134.43** 8.08** 14.800** 17.43** 15.71** 17.33** 0.5** 134.43** 8.08** 14.800** 17.43** 15.71** 17.33** 0.5** 134.43** 18.08** 17.800** 17.43** 15.71** 17.33** 10.5** 134.43** 18.08** 17.800** 17.43** 15.71** 17.33** 10.5** 134.43** 18.08** 17.99** 17.44** 10.00** 17.43** 16.59** 18.5** 10.2** 134.03** 17.99** 17.800** 17.81** 16.59** 18.5** 10.2** 134.03** 17.99** 17.800** 17.81** 16.59** 18.5** 10.2** 134.03** 18.02** 17.900** 17.82** 16.54** 184.3** 10.3** 134.03** 18.02** 17.800** 17.82** 16.54** 184.3** 10.3** 134.03** 18.02** 17.800** 17.82** 16.54** 184.3** 10.3** 134.03** 18.02** 17.800** 17.82** 16.54** 184.3** 10.3** 134.03** 18.02** 17.800** 17.45** 16.35** 181.5** 10.2** 134.13** 18.02** 17.800** 17.45** 16.35** 181.5** 10.6** 134.25** 18.03** 17.800** 17.45** 16.35** 181.5** 10.6** 134.25** 18.03** 17.800** 17.79** 16.33** 181.4** 10.2** 134.19** 18.03** 17.45** 16.34** 181.4** 10.8** 134.24** 18.04** 17.400** 17.79** 16.33** 181.4** 10.2** 134.19** 18.03** 17.900** 17.79** 16.33** 181.4** 10.2** 134.19** 18.03** 17.900** 17.79** 16.33** 18.65** 18.45** 10.2** 134.19** 18.03** 17.900** 17.79** 16.33** 18.65** 18.45** 10.2** 134.19** 18.03** 17.900** 17.79** 16.33** 18.65** 18.45** 10.2** 134.19** 18.03** 17.900** 17.79** 16.33** 18.600** 17.500** 17.79** 16.33** 18.600** 17.500** 17.79** 16.33** 18.600** 17.500** 17.79** 16.33** 18.600** 17.500** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79** 18.600** 17.79**							1.000	18.06	5.92	76.9	0.2	34.15	8.05	2.7
2014/3/24 11:40 W1 MF 832981 807716 2.6 1.300 17.43 5.71 73.3 0.5 34.43 8.08 8.07 4.800 17.43 5.71 73.3 0.5 34.44 8.08 8.08 14.800 17.43 5.71 73.3 0.5 34.45 8.08 8.08 14.800 17.43 5.71 73.3 0.5 34.45 8.08 8.08 17.45														Z.1
2014/3/24 11:40 W1 MF	2014/3/24 18:22	C3	ME.	832228	808881	15.8								4.4
2014/3/24 11:40 W1 MF	201 1/3/2 1 10/22	05		032220	000001	13.0								
2014/3/24 11:09 W1 MF 832981 807716 2.6 1.300 17.82 6.58 84.9 0.2 34.03 7.99 1.300 17.81 6.59 85 0.2 34.02 7.99 1.300 17.81 6.59 85 0.2 34.02 7.99 1.300 17.82 6.54 84.3 0.3 34.05 8 1.000 17.82 6.54 84.3 0.3 34.04 8 1.000 17.82 6.54 84.5 0.3 34.04 8 1.000 17.82 6.54 84.5 0.3 34.04 8 1.000 17.82 6.54 84.5 0.3 34.04 8 1.000 17.82 6.54 84.5 0.3 34.04 8 1.000 17.57 6.4 82.3 0.2 34.14 8.02 1.000 17.57 6.4 82.3 0.2 34.14 8.02 1.000 17.57 6.4 82.3 0.2 34.14 8.02 1.000 17.57 6.4 82.3 0.2 34.14 8.02 1.000 17.57 6.4 82.3 0.2 34.14 8.02 1.000 17.58 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.49 82.3 0.2 34.14 8.02 1.000 17.78 6.49 82.3 0.2 34.18 8.03 1.000 17.78 6.49 82.3 0.2 34.18 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.25 8.03 1.000 17.78 6.35 81.5 0.6 34.04 8.01 1.000 17.79 6.32 81.3 0.2 34.18 8.03 1.000 17.78 6.35 81.4 0.2 34.19 8.03 1.000 17.78 6.34 81.4 0.8 34.24 8.04 8.04 8.04 8.04 8.04 8.04 8.04 8.0														4.3
2014/3/24 11:16 W2 MF 832981 807/16 2.6							14.000	17.43	J.12	73.4	0.0	J4.44	0.00	
2014/3/24 11:16 W2 MF 832981 807/16 2.6							1.300	17.82	6,58	84.9	0.2	34.03	7.99	
2014/3/24 11:16 W2 MF 832692 807980 12.8	2014/3/24 11:09	W1	MF	832981	807716	2.6					0.2			4.4
2014/3/24 11:16 W2 MF 832692 807980 12.8							1.000	17.81	6.54	84.3	0.3	34.05	8	3.1
2014/3/24 10:34 C3 MF 83247 808890 16.1 80.0 17.45 6.34 82.3 0.2 34.14 8.02 1.000 17.45 6.38 81.8 0.7 34.25 8.03 11.800 17.45 6.35 81.5 0.6 34.25 8.03 11.800 17.77 6.39 82.4 0.5 34.04 8.01 1.000 17.77 6.39 82.4 0.5 34.04 8.01 1.000 17.78 6.34 81.4 0.2 34.19 8.03 11.100 17.49 6.41 82.4 0.9 34.2 8.03 11.100 17.49 6.41 82.4 0.9 34.2 8.03 11.100 17.49 6.41 82.4 0.9 34.2 8.03 11.100 17.78 6.74 86.9 0.3 33.96 7.99 1.000 17.79 6.73 86.8 0.3 33.95 7.99 1.000 17.79 6.73 86.8 0.3 33.95 7.99 1.000 17.79 6.73 86.8 0.3 33.95 7.99 1.000 17.79 6.73 86.8 0.3 33.95 7.99 1.000 17.79 6.73 86.8 0.3 33.95 7.99 1.000 17.79 6.79 86.8 3.2 34.28 8.03 1.2 34.28 8.03 11.800 17.59 6.79 86.8 0.3 33.95 7.99 1.000 17.78 6.74 86.9 0.3 34.19 8.01 1.000 17.79 6.79 86.8 0.3 33.95 7.99 1.000 17.78 6.74 86.9 0.3 34.19 8.01 1.000 17.79 6.79 86.8 0.3 33.95 7.99 1.000 17.79 6.79 86.8 0.3 33.95 7.99 1.000 17.79 6.79 86.8 0.3 33.95 7.99 1.000 17.79 6.79 86.8 0.3 33.95 7.99 1.000 17.79 6.79 86.8 0.3 33.95 7.99 1.000 17.79 6.79 86.8 0.3 33.95 7.99 1.000 17.75 6.52 83.7 0.3 34.19 8.01 1.000 17.75 6.75 8.00 17.29 6.79 86.8 3.2 34.28 8.03 1.2 34.28 8.03 1.2 34.28 8.03 1.2 34.28 8.03 1.2 34.28 8.03 1.2 34.28 8.03 1.2 34.28 8.04 1.000 17.75 6.25 80.3 0.3 34.23 8.04 1.2 34.28 8.04 1.000 17.75 6.25 80.3 0.3 34.23 8.04 1.000 17.75 6.25 80.3 0.3 34.23 8.04 1.000 17.75 6.25 80.3 0.3 34.23 8.04 1.000 17.75 6.25 80.3 0.3 34.23 8.04 1.000 17.75 6.25 80.3 0.3 34.23 8.04 1.000 17.75 6.25 80.3 0.3 34.23 8.04 1.000 17.75 6.25 80.3 0.3 34.23 8.04 1.000 17.8 7.28 93.8 1.2 33.81 7.93 1.000 17.8 7.28 93.8 1.2 33.81 7.93 1.000 17.45 7.03 90 0.77 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.													8	5.1
11.800 17.45 6.38 81.8 0.7 34.25 8.03 11.800 17.45 6.38 81.8 0.7 34.25 8.03 11.800 17.45 6.35 81.5 0.6 34.25 8.03 11.800 17.78 6.43 83 0.4 34.03 8.01 10.00 17.77 6.39 82.4 0.5 34.04 8.01 10.00 17.79 6.32 81.3 0.2 34.18 8.03 11.100 17.49 6.41 82.4 0.9 34.2 8.03 11.100 17.46 6.34 81.4 0.8 34.24 8.03 11.100 17.46 6.34 81.4 0.8 34.24 8.03 11.100 17.79 6.73 86.8 0.3 33.95 7.99 10.00 17.79 6.73 86.8 0.3 33.95 7.99 10.00 17.71 6.59 84.3 3.1 34.26 8.03 15.800 17.31 6.59 84.3 3.1 34.26 8.03 15.800 17.29 6.79 86.8 3.2 34.28 8.03 15.800 17.75 6.38 82.2 0.6 34.06 8.03 10.00 17.78 6.36 82 0.4 34.09 8.02 10.00 17.75 6.38 82.2 0.6 34.06 8.03 10.00 17.75 6.38 82.2 0.6 34.06 8.03 10.00 17.50 6.38 82.2 0.6 34.06 8.03 10.00 17.50 6.38 82.2 0.6 34.06 8.03 10.00 17.50 6.38 82.2 0.6 34.06 8.03 10.00 17.50 6.38 82.2 0.6 34.06 8.03 10.00 17.50 6.38 82.2 0.6 34.06 8.03 10.00 17.50 6.38 82.2 0.6 34.06 8.03 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34.2 8.04 10.00 17.50 6.25 80.3 0.3 34	2014/3/24 11:16	W2	MF	832692	807980	12.8								3.6
2014/3/24 11:30 W3 MF 832039 MF 831469 MF 832247 MF 8322				00 20, 2										
2014/3/24 11:30 W3 MF 832039 807894 12.1														3.6
2014/3/24 11:30 W3 MF 832039 807894 12.1 \[\begin{array}{c c c c c c c c c c c c c c c c c c c		1												
2014/3/24 11:30 W3 MF 832039 807894 12.1														4.3
0.050 17.58 6.33 81.4 0.2 34.19 8.03 11.100 17.49 6.41 82.4 0.9 34.2 8.03 11.100 17.46 6.34 81.4 0.8 34.24 8.04 6.0 11.100 17.46 6.34 81.4 0.8 34.24 8.04 8.04 8.04 8.04 8.04 8.04 8.04 8.0	2014/2/24 11 20	1110) (F	022020	007004	10.1	6.050		6.32	81.3	0.2	34.18	8.03	4.5
2014/3/24 10:58	2014/3/24 11:30	W.5	IVIF	832039	807894	12.1								4.5
2014/3/24 10:58														6.8
2014/3/24 10:58 C1 MF 833708 808179 16.8 1.000 17.79 6.73 86.8 0.3 33.95 7.99 2.00 8.400 17.52 6.59 84.6 0.3 34.17 8.01 8.400 17.51 6.52 83.7 0.3 34.19 8.01 15.800 17.31 6.59 84.3 3.1 34.26 8.03 15.800 17.29 6.79 86.8 3.2 34.28 8.03 15.800 17.78 6.36 82 0.4 34.09 8.02 1.000 17.78 6.36 82 0.4 34.09 8.02 1.000 17.75 6.38 82.2 0.6 34.06 8.03 1.000 17.55 6.28 80.1 0.2 34.2 8.04 1.000 17.58 6.21 79.9 0.2 34.21 8.04 1.000 17.50 6.25 80.3 0.3 34.23 8.04 1.000 17.8 7.31 94.2 1.7 33.81 7.92 1.000 17.8 7.28 93.8 1.2 33.81 7.92 1.000 17.8 7.28 93.8 1.2 33.81 7.93 1.000 17.8 7.28 93.8 1.2 33.81 7.93 1.000 17.8 7.28 93.8 1.2 33.81 7.93 1.000 17.8 7.28 93.8 1.2 33.81 7.93 1.000 17.8 7.28 93.8 1.2 33.81 7.93 1.000 17.45 7.03 90 0.7 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96 1.000 17.45 7.04 90.2 0.6 33.94 7.96		1												5.0
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2014/3/24 11:41 C2 MF 831469 807749 10.6 15.800 17.29 6.79 80.8 3.2 34.28 8.03 1.000 17.78 6.36 82 0.4 34.09 8.02 1.000 17.75 6.38 82.2 0.6 34.06 8.03 5.20 17.58 6.23 80.1 0.2 34.2 8.04 1.000 17.58 6.21 79.9 0.2 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 0.3 34.2 8.04 1.000 17.59 6.25 80.3 1.2 33.81 7.92 1.000 17.59 6.25 80.3 1.2 33.81 7.93 1.000 17.59 6.25 80.3 1.2 33.81 7.93 1.000 17.59 6.25 80.3 1.2 33.81 7.93 1.000 17.59 6.25 80.3 1.2 33.81 7.93 1.000 17.59 6.25 80.3 1.2 33.81 7.93 1.000 17.59 6.25 80.3 1.2 33.81 7.93 1.000 17.59 6.25 80.3 1.000 17.59 80.50 17.45 7.03 90.0 1.000 17.59 80.50 17.45 7.03 90.0 1.000 17.59 80.50 17.45 7.04 90.2 0.66 33.94 7.96 1.000 17.59 80.50 17.45 7.04 90.2 0.66 33.94 7.96 1.000 17.50 17.45 7.000 17.45 7.04 90.2 0.66 33.94 7.96 1.000 17.50 17.45 7.000								17.31	6.59	84.3	3.1	34.26	8.03	6.1
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2014/3/24 11:41 C2 MF 831469 807749 10.6														3.3
2014/3/24 10:34 C3 MF 832247 808890 16.1 5.300 17.58 6.21 79.9 0.2 34.21 8.04 9.600 17.52 6.22 79.9 0.3 34.2 8.04 9.600 17.5 6.25 80.3 0.3 34.2 8.04 9.600 17.5 6.25 80.3 0.3 34.2 8.04 9.600 17.8 7.31 94.2 1.7 33.81 7.92 1.000 17.8 7.28 93.8 1.2 33.81 7.92 1.000 17.8 7.28 93.8 1.2 33.81 7.93 9.0 9.07 33.94 7.96 1.000 17.8 7.03 90 0.7 33.94 7.96 1.000 17.8 7.03 90 0.7 33.94 7.96 1.000 17.8 7.03 90 0.7 33.94 7.96 1.000 17.8 7.03 90 0.7 33.94 7.96 1.000 17.8 7.03 90 0.7 33.94 7.96 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.6 1.000 17.8 7.04 90.2 0.000 17.8 90.2 0.000 17.8 90														
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2014/3/24 10:34 C3 MF 832247 808890 16.1 1.000 17.8 7.31 94.2 1.7 33.81 7.92 1.000 17.8 7.28 93.8 1.2 33.81 7.93 1.000 17.8 1.000 17.														3.5
2014/3/24 10:34 C3 MF 832247 808890 16.1 1.000 17.8 7.28 93.8 1.2 33.81 7.93 8.050 17.45 7.03 90 0.7 33.94 7.96 3.050 17.45 7.04 90.2 0.6 33.94 7.96		1												2.4
2014/5/24 10:34 C3 MF 832247 808890 16.1 8.050 17.45 7.04 90.2 0.6 33.94 7.96														3.4
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1 15 100 L 17 22L 67AL 96 1L 15L 2A 27L 9 001	201 113/27 10:37		1411	032247	000000	10.1								J.0
15.100 17.23 6.74 86.1 1.5 34.27 8.02 15.100 17.23 6.74 86.1 1.5 34.29 8.02							15.100	17.23	6.74	86.1	1.5	34.27	8.02	3.4

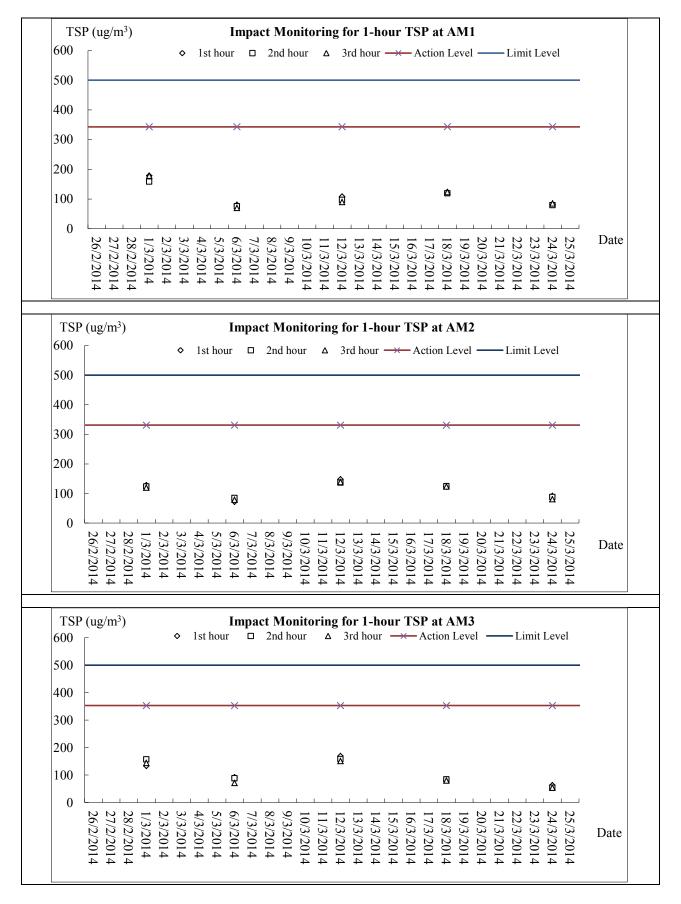


Appendix I

Graphical Plots of Monitoring Results

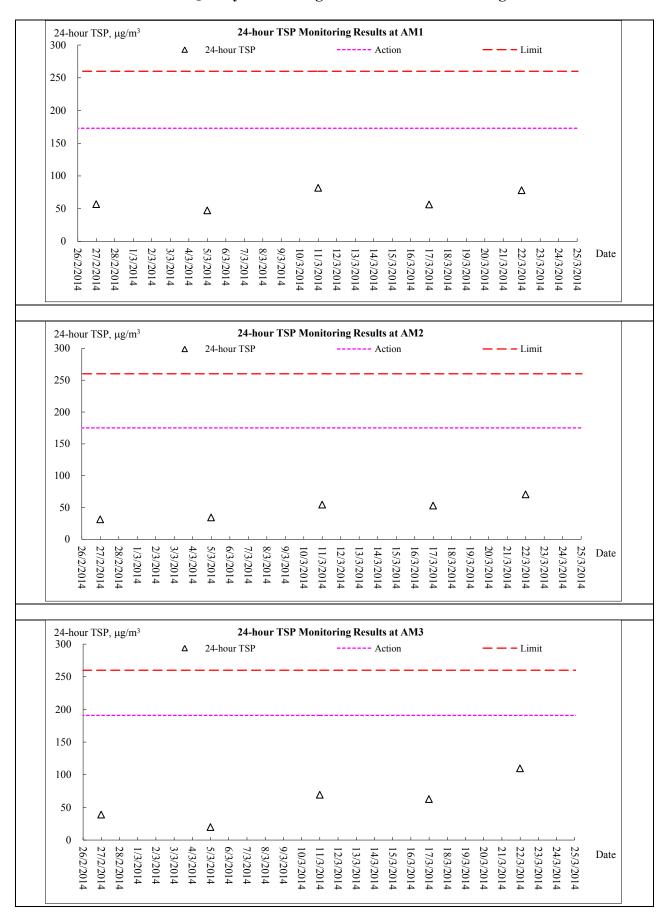


Air Quality Monitoring – 1 hour TSP Monitoring



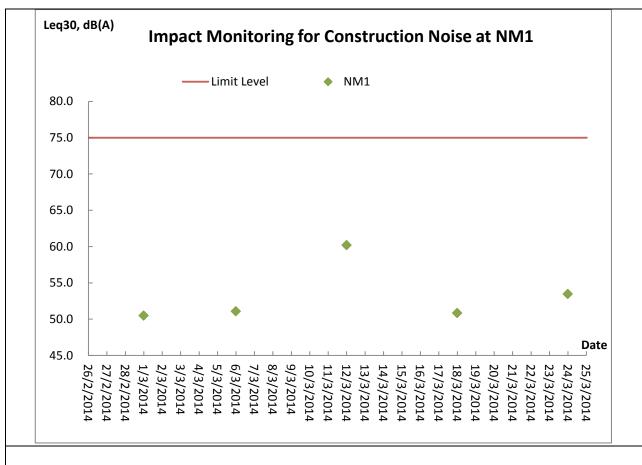


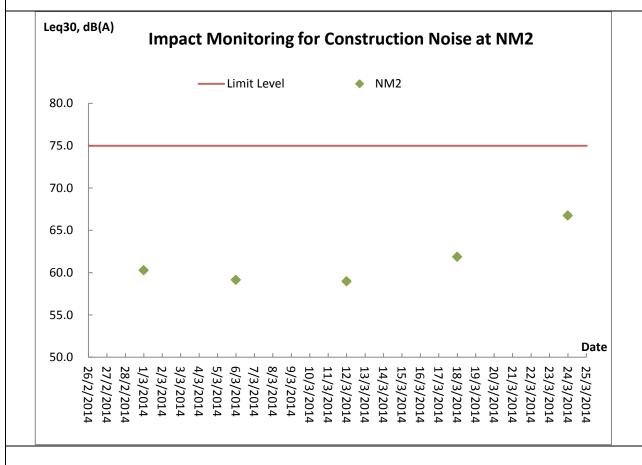
Air Quality Monitoring - 24 hour TSP Monitoring



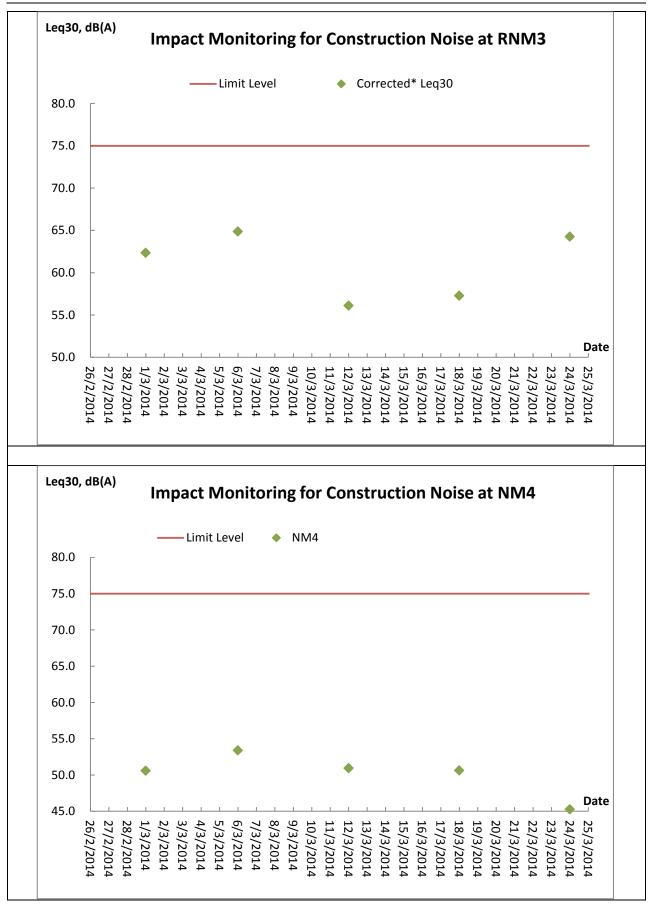


Construction Noise Monitoring



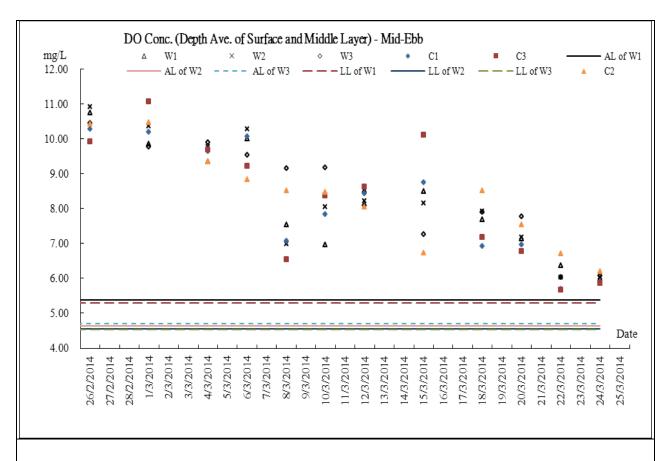


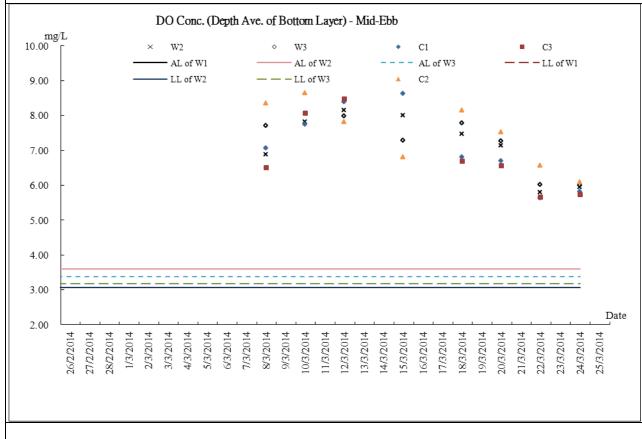




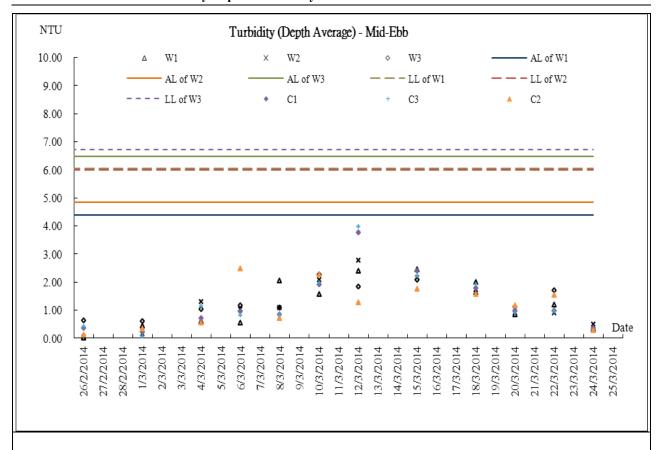


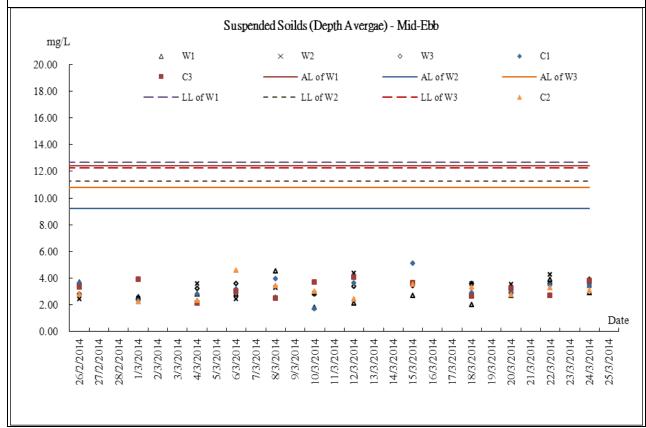
Marine Water Quality Monitoring - Mid-Ebb Tide





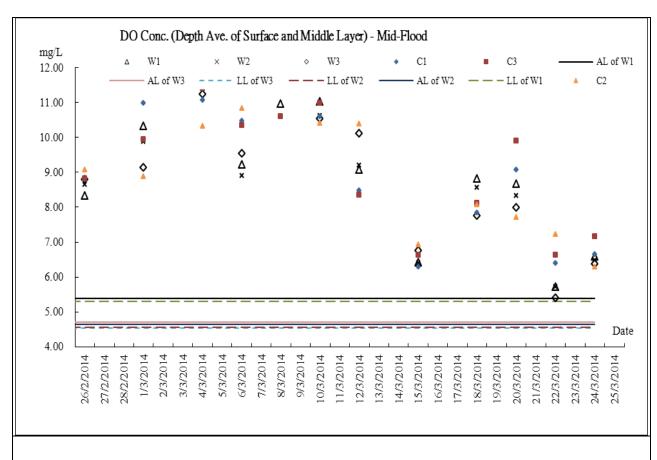


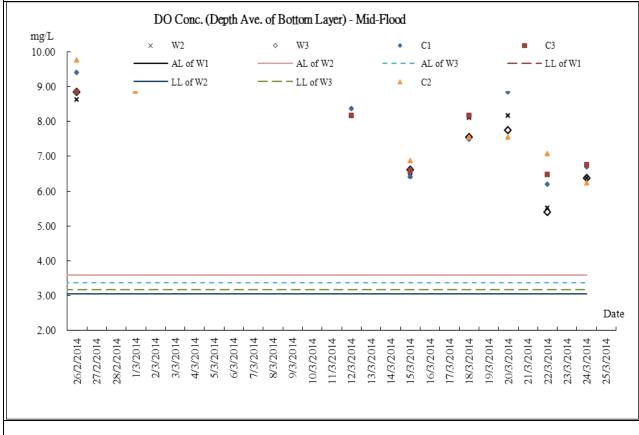




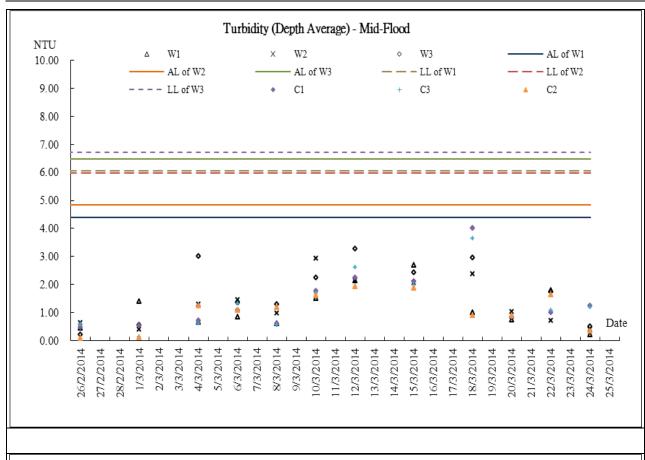


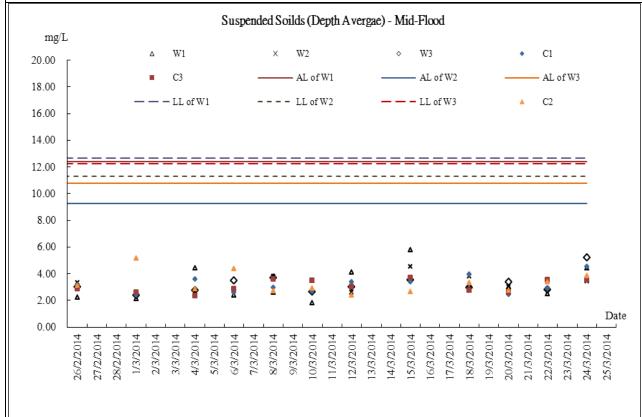
Marine Water Quality Monitoring - Mid-Flood Tide













Appendix J

Meteorological Information



Meteorological Data Extracted from HKO during the Reporting Period

Date		Weather
26-Feb-14	Wed	Sunny periods, cloudy, rain. Moderate east to northeasterly winds.
27-Feb-14	Thu	Sunny periods, cloudy, rain. Moderate east to northeasterly winds.
28-Feb-14	Fri	Sunny periods, cloudy, rain. Moderate east to northeasterly winds.
1-Mar-14	Sat	Cloudy, rain, misty. Moderate to fresh easterly winds.
2-Mar-14	Sun	Cloudy, rain, misty. Moderate to fresh easterly winds.
3-Mar-14	Mon	Cloudy, rain, misty. Moderate to fresh easterly winds.
4-Mar-14	Tue	Cloudy with mist and a few rain patches. Light to moderate northeasterly winds.
5-Mar-14	Wed	Cloudy, rain. Fresh to strong easterly winds.
6-Mar-14	Thu	Cloudy, rain. Moderate to fresh easterly winds
7-Mar-14	Fri	Cloudy, rain. Moderate to fresh easterly winds
8-Mar-14	Sat	Foggy, cloudy, rain. Light winds, becoming moderate to fresh northerlies.
9-Mar-14	Sun	Foggy, cloudy, rain. Light winds, becoming moderate to fresh northerlies.
10-Mar-14	Mon	Foggy, cloudy, rain. Light winds, becoming moderate to fresh northerlies.
11-Mar-14	Tue	Foggy, cloudy, rain. Light winds, becoming moderate to fresh northerlies.
12-Mar-14	Wed	Cloudy, rain, bright. Moderate to fresh northerly winds
13-Mar-14	Thu	Foggy, cloudy, rain. Light winds, becoming moderate to fresh northerlies.
14-Mar-14	Fri	Cloudy, rain, bright. Moderate to fresh northerly winds
15-Mar-14	Sat	Cloudy, sunny intervals. Light to moderate easterly winds.
16-Mar-14	Sun	Cloudy, sunny intervals. Light to moderate easterly winds.
17-Mar-14	Mon	Cloudy, sunny intervals. Light to moderate easterly winds.
18-Mar-14	Tue	Warm with sunny periods. Light to moderate southeasterly winds.
19-Mar-14	Wed	Warm with sunny periods. Light to moderate southeasterly winds.
20-Mar-14	Thu	Warm with sunny periods. Light to moderate southeasterly winds.
21-Mar-14	Fri	Cloudy, sunny intervals. Light to moderate easterly winds.
22-Mar-14	Sat	Cloudy, fog, fine. Light to moderate east to southeasterly winds.
23-Mar-14	Sun	Cloudy, fog, fine. Light to moderate east to southeasterly winds.
24-Mar-14	Mon	Cloudy, fog, fine. Light to moderate east to southeasterly winds.
25-Mar-14	Tue	Cloudy, fog, fine. Light to moderate east to southeasterly winds.



Appendix K

Monthly Summary Waste Flow Table

Contract No.:

DC/2009/13

Monthly Summary Waste Flow Table for March 2014

			Actı	ıal Quant	ities of Ir	nert C&D	Material	s Genera	ted Mont	hly				A	Actual Qu	ıantities	of C&D	Wastes	Generate	ed Montl	ıly		
Month	Gene	Quantity erated +(d)+(e)	Hard Re Large I Con-	Broken crete	Reused Con	tract	Reused Proj (c	ects	Dispo Publi (6	c Fill	Import		Me	tals	Par cardt packa	oard	Plastics		Chemical Waste		Oth e.g. ru	-	
	(in '00	00m³)	(in '00	00m³)	(in '00	00m³)	(in '000m ³)		(in '00	00m³)	(in '00	00m ³)	(in '0	00kg)	(in '00	00kg)	(in '0	00kg)	(in '000kg)		(in tonne)		
	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	
2014	15.933	50.762	0.160	0.432	0.740	2.802	0.000	0.000	15.194	47.960	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	487.580	290.030	
Jan	0.342	0.325	0.000	0.005	0.000	0.000	0.000	0.000	0.342	0.325	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.480	4.820	
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.110	4.300	
Mar	0.305	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.305	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.150	4.340	
Apr																							
May																							
Jun																							
Sub-total	16.581	51.087	0.160	0.437	0.740	2.802	0.000	0.000	15.841	48.285	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	515.320	303.490	
Jul																							
Aug																							
Sep																							
Oct																							
Nov																							
Dec																							
Total	16.581	51.087	0.160	0.437	0.740	2.802	0.000	0.000	15.841	48.285	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	515.320	303.490	
10111	67.6	668	0.5	97	3.5	42	0.0	00	64.1	126	0.0	00	0.0	0.000		0.000 0.000		0.000		0.000		818.810	

Remark: Assume 1.0 m^3 vehicle dump load = 1.6 tonnes C&D materials

YSW: Yung Shue Wan SKW: Sok Kwu Wan



Appendix L

Weekly Site Inspection Checklist

Environmental Team – Weekly Site Inspection and Audit Checklist – Sok Kwu Wan

AUES

Wea Temp Hum Wind	DC-2009-13: Construction of S Treatment Works at Yung Shue W Kwu Wan 4 Mar 2014 RT A: GENERA ather: Sunny Fine [perature: 16.8 °C nidity: High ✓ Moderate [Sewage I'an and Sok F II TAL INFORMATION Cloudy F Low	RE's Repre	by Representa esentative 's Represe esentative		Mr. Martin Li Mr. Daniel Chau Mr. M.K. Leung 11:00 Environmental Permit No. FP- 281/2007A					
PART	ГВ:	SITE AUDIT									
Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Follow Up: Observations requiring follow-Up actions		Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks			
Section	on 1: Water Quality			⊢							
1.01	Is an effluent discharge license obtained for the	Project?					<u> </u>				
1.02	Is the effluent discharged in accordance with the	e discharge licence?		$\overline{\square}$			<u></u>				
1.03	Is the discharge of turbid water avoided?			$\overline{\checkmark}$							
1.04	Are there proper desilting facilities in the direduce SS levels in effluent?	rainage systems to		\checkmark							
1.05	Are there channels, sandbags or bunds to dire sedimentation tanks?	ct surface run-off to		\checkmark							
1.06	Are there any perimeter channels provided a intercept storm runoff from crossing the site?	site boundaries to		\checkmark							
1.07	Is drainage system well maintained?			\checkmark							
1.08	As excavation proceeds, are temporary access crushed stone or gravel?	roads protected by									
1.09	Are temporary exposed slopes properly covered	d?					✓				
1.10	Are earthworks final surfaces well compacted o	r protected?		\checkmark							
1.11	Are manholes adequately covered or temporari	ly sealed?		\checkmark							
1.12	Are there any procedures and equipment for ra	instorm protection?		\checkmark							
1.13	Are wheel washing facilities well maintained?						$\overline{\checkmark}$				
1.14	Is runoff from wheel washing facilities avoided?						$\overline{\checkmark}$				
1.15	Are there toilets provided on site?			\checkmark							
1.16	Are toilets properly maintained?			\checkmark							
1.17	Are the vehicle and plant servicing areas paveroofed areas?	d and located within									
1.18	Is the oil/grease leakage or spillage avoided?			\checkmark							
1.19	Are there any measures to prevent leaked o drainage system?	il from entering the		\checkmark							
1.20	Are there any measures to collect spilt cer washings during concreting works?	ment and concrete		\checkmark							
1.21	Are there any oil interceptors/grease traps in the for vehicle and plant servicing areas, canteen k						√ -				

Environmental Team - Weekly Site Inspection and Audit Checklist - Sok Kwu Wan

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Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.22	Are the oil interceptors/grease traps maintained properly?					\checkmark	
1.23	Is used bentonite recycled where appropriate?					\checkmark	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m3 capacities for sedimentation.					\checkmark	
1.25	No excavation is undertaken in the settlement area.					\checkmark	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.					\checkmark	
1.27	Mobile toilets should provide on site and located away the stream course.		\checkmark				
1.28	License collector should be employed for handling the sewage of mobile toilet.		\checkmark				
1.29	Is ponding /stand water avoided?		\checkmark				
Section	on 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?					\checkmark	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?						
2.03	Are the excavated materials sprayed with water during handling?					\checkmark	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?		\checkmark				
2.05	Is the exposed earth properly treated within six months after the last construction activities?					\checkmark	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?					\checkmark	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?					\checkmark	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?					\checkmark	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?					\checkmark	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?					\checkmark	
2.11	Is dark smoke emission from plant/equipment avoided?		\checkmark				
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?					\checkmark	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?					\checkmark	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?		\checkmark				
2.15	Is open burning avoided?		\checkmark				
2.16	Excavated materials from the stream must be removed from the site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.					\checkmark	
Sectio	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?					\checkmark	
3.02	Is silenced equipment adopted?					\checkmark	
3.03	Is idle equipment turned off or throttled down?	\checkmark					
3.04	Are all plant and equipment well maintained and in good condition?		\checkmark				
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?					\checkmark	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?					$\overline{\checkmark}$	
3.07	Are air compressors fitted with valid noise emission labels during operation?					\checkmark	-

Environmental Team – Weekly Site Inspection and Audit Checklist – Sok Kwu Wan



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
3.08	Are flaps and panels of mechanical equipment closed during operation?					\checkmark	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?					\checkmark	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?					\checkmark	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?					\checkmark	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).					\checkmark	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)					\checkmark	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).					\checkmark	
Section	on 4: Waste/Chemical Management						
4.01	Waste Management Plan had been submit to Engineer for approval.		\checkmark				
4.02	Are receptacles available for general refuse collection?		\checkmark				
4.03	Is general refuse sorting or recycling implemented?		\checkmark				
4.04	Is general refuse disposed of properly and regularly?		\checkmark				
4.05	Is the Contractor registered as a chemical waste producer?					\checkmark	
4.06	Are the chemical waste containers and storage area properly labelled?					\checkmark	
4.07	Are the chemical wastes stored in proper storage areas?					\checkmark	
4.08	Is the chemical container or equipment provided with drip tray?					\checkmark	
4.09	Is the chemical waste storage area used for storage of chemical waste only?					\checkmark	
4.10	Are incompatible chemical wastes stored in different areas?					\checkmark	
4.11	Are the chemical wastes disposed of by licensed collectors?					\checkmark	
4.12	Are trip tickets for chemical wastes disposal available for inspection?					\checkmark	
4.13	Are chemical/fuel storage areas bounded?					\checkmark	
4.14	Are designated areas identified for storage and sorting of construction wastes?					\checkmark	
4.15	Are construction wastes sorted (inert and non-inert) on site?		\checkmark				
4.16	Are construction wastes reused?		\checkmark				
4.17	Are construction wastes disposed of properly?		\checkmark				
4.18	Are site hoardings and signboards made of durable materials instead of timber?		\checkmark				
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?		\checkmark				
4.20	Are appropriate procedures followed if contaminated material exists?					\checkmark	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?					\checkmark	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.		\checkmark				
4.23	Contaminated sediments will be managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.						

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Section 5.01 5.02	Follow Up: Observations requiring follow-Up actions N/A: Not Applicable n 5: Landscape & Visual Are retained and transplanted trees in health condition? Are retained and transplanted trees properly protected?	Obs.		Up		Remarks
5.02						
	Are retained and transplanted trees properly protected?	-			\checkmark	
5.03						
	Are surgery works carried out for the damaged trees?	\checkmark				
5.04	Is damage to trees outside site boundary due to construction activities avoided?	n 🔲				
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	e 🔲				
Sectio	n 6: Others					
	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	е 🗌			<u></u>	
	environmental issue was observed during the site ection	Nil.				

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Note: Not Obs: Not Observed: Yes: Compliance: No: Non-Compliance: Obs. Ves No	Hum	Treatment Works at Yung Shue Wan and Sok Kwu Wan 11 Mar 2014 ET A: GENERAL INFORMATION of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan Stra: GENERAL INFORMATION of Sewage Treatment of Sewage T	RE's Repro Contractor IEC's Repro Time:	Representat		Mr. Mart Mr. Dani Mr. M.K.	in Li el Chau Leung	S512B-11 Mar 2014
Section 1: Water Quality 1.01 is an effluent discharge license obtained for the Project? 1.02 is the effluent discharged in accordance with the discharge licence? 1.03 is the discharge of turbid water avoided? 1.04 Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent? 1.05 Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks? 1.06 Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site? 1.07 Is drainage system well maintained? 1.08 As excavation proceeds, are temporary access roads protected by crushed stone or gravel? 1.09 Are temporary exposed slopes properly covered? 1.10 Are earthworks final surfaces well compacted or protected? 1.11 Are manholes adequately covered or temporarily sealed? 1.12 Are there any procedures and equlpment for rainstorm protection? 1.13 Are wheel washing facilities well maintained? 1.14 Is runoff from wheel washing facilities avoided? 1.15 Are there tollets provided on site? 1.16 Are tollets properly maintained? 1.17 Are there any measures to prevent leaked oil from entering the drainage system? 1.18 Is the oil/grease leakage or spillage avoided? 1.19 Are there any measures to collect spilt cement and concrete washings during concreting works? 1.20 Are there any measures to collect spilt cement and concrete washings during concreting works? 1.21 Are there any oil interceptor/grease traps in the drainage systems		Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance;		Yes	No		N/A	
1.02 Is the effluent discharged in accordance with the discharge licence?	Section		1			•		
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Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent? 1.05 Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks? 1.06 Intercept storm runoff from crossing the site? 1.07 Is drainage system well maintained? 1.08 As excavation proceeds, are temporary access roads protected by crushed stone or gravel? 1.09 Are temporary exposed slopes properly covered? 1.10 Are earthworks final surfaces well compacted or protected? 1.11 Are manholes adequately covered or temporarily sealed? 1.12 Are there any procedures and equipment for rainstorm protection? 1.13 Are wheel washing facilities well maintained? 1.14 Is runoff from wheel washing facilities avoided? 1.15 Are there toilets provided on site? 1.16 Are toilets properly maintained? 1.17 Are the vehicle and plant servicing areas paved and located within roofed areas? 1.18 Is the oil/grease leakage or spillage avoided? 1.19 Are there any measures to prevent leaked oil from entering the drainage system? 1.20 Are there any measures to collect spilt cement and concrete washings during concreting works?	1.02	Is the effluent discharged in accordance with the discharge licence	e? 🗌	\checkmark				
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1.22	Are the oil interceptors/grease traps maintained properly?					\checkmark	
1.23	Is used bentonite recycled where appropriate?					\checkmark	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m3 capacities for sedimentation.					\checkmark	
1.25	No excavation is undertaken in the settlement area.					\checkmark	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.					\checkmark	
1.27	Mobile toilets should provide on site and located away the stream course.		\checkmark				
1.28	License collector should be employed for handling the sewage of mobile toilet.		\checkmark				
1.29	Is ponding /stand water avoided?		\checkmark				
Section	on 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?					\checkmark	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?		\checkmark				
2.03	Are the excavated materials sprayed with water during handling?					\checkmark	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?		\checkmark				
2.05	Is the exposed earth properly treated within six months after the last construction activities?					\checkmark	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?					\checkmark	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?					\checkmark	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?					\checkmark	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?					\checkmark	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?						
2.11	Is dark smoke emission from plant/equipment avoided?		\checkmark				
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?					\checkmark	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?					\checkmark	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?		\checkmark				
2.15	Is open burning avoided?		\checkmark				
2.16	Excavated materials from the stream must be removed from the site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.					\checkmark	
Sectio	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?					\checkmark	
3.02	Is silenced equipment adopted?					\checkmark	
3.03	Is idle equipment turned off or throttled down?	\checkmark					
	Are all plant and equipment well maintained and in good condition?		\checkmark				
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?					$\overline{\mathbf{V}}$	
3.00	Are hand held breakers fitted with valid noise emission labels during operation?					$\overline{\mathbf{V}}$	
3.07	Are air compressors fitted with valid noise emission labels during operation?					$\overline{\mathbf{V}}$	



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
3.08	Are flaps and panels of mechanical equipment closed during operation?					\checkmark	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?					\checkmark	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?					\checkmark	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?					\checkmark	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).					\checkmark	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)					V	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).					V	
Section	on 4: Waste/Chemical Management						
4.01	Waste Management Plan had been submit to Engineer for approval.		\checkmark				
4.02	Are receptacles available for general refuse collection?		\checkmark				
4.03	Is general refuse sorting or recycling implemented?		\checkmark				
4.04	Is general refuse disposed of properly and regularly?		\checkmark				
4.05	Is the Contractor registered as a chemical waste producer?					\checkmark	
4.06	Are the chemical waste containers and storage area properly labelled?					\checkmark	
4.07	Are the chemical wastes stored in proper storage areas?					\checkmark	
4.08	Is the chemical container or equipment provided with drip tray?					\checkmark	
4.09	Is the chemical waste storage area used for storage of chemical waste only?					\checkmark	
4.10	Are incompatible chemical wastes stored in different areas?					\checkmark	
4.11	Are the chemical wastes disposed of by licensed collectors?					\checkmark	
4.12	Are trip tickets for chemical wastes disposal available for inspection?					\checkmark	
4.13	Are chemical/fuel storage areas bounded?					\checkmark	
4.14	Are designated areas identified for storage and sorting of construction wastes?					\checkmark	
4.15	Are construction wastes sorted (inert and non-inert) on site?		\checkmark				
4.16	Are construction wastes reused?		\checkmark				
4.17	Are construction wastes disposed of properly?		\checkmark				
4.18	Are site hoardings and signboards made of durable materials instead of timber?		\checkmark				
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?		\checkmark				
4.20	Are appropriate procedures followed if contaminated material exists?					\checkmark	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?					\checkmark	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.		\checkmark				
4.23	Contaminated sediments will be managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.					\checkmark	



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Section	on 5: Landscape & Visual						
5.01	Are retained and transplanted trees in health condition?					$\overline{\mathbf{V}}$	
5.02	Are retained and transplanted trees properly protected?		\checkmark				
5.03	Are surgery works carried out for the damaged trees?	\checkmark					
5.04	Is damage to trees outside site boundary due to construction activities avoided?		V				
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?					V	
Section	on 6: Others					-	
6.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?						
Ren	k Kwu Wan) narks:	E-	llow us	/ 44 84-	rob 2044	v.	
rinc	dings of Site Inspection: (11 March 2014)	Fo	llow up	(11 Ma	rch 2014	1	
	environmental issue was observed during the site ection	Nil.					
EC's I	representative RE's representative ET's representative	ive	EO's re	oresentat	ive	Contracto	r's representative
	A - 1		,				

AUES

Date: PART A: Weather: Temperature Humidity: Wind: Area Inspec		DC-2009-13: Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan 21 Mar 2014 GENERAL INFORMATION Sunny Fine Cloudy 16.5 High Moderate Low Strong Breeze Light	RE's Repre Contractor	Representa		Mr. Mart Mr. Dani Mr. M.K.	5512B-21 Mar 2014	
1		íwu Wan	<u>-</u>					
PART	`B:	SITE AUDIT	Υ		_			
Note:		os.: Not Observed; Yes: Compliance; No: Non-Compliance; Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
		ater Quality	 1	 	 1	 1	,	
1.01	Is an	effluent discharge license obtained for the Project?						
1.02	Is the	effluent discharged in accordance with the discharge licence?		✓				
1.03		discharge of turbid water avoided?						
1.04	Are to reduc	nere proper desilting facilities in the drainage systems to e SS levels in effluent?		\checkmark				
1.05		ere channels, sandbags or bunds to direct surface run-off to entation tanks?		\checkmark				
1.06		here any perimeter channels provided at site boundaries to ept storm runoff from crossing the site?		\checkmark				
1.07	ls dra	nage system well maintained?		\checkmark				
1.08		cavation proceeds, are temporary access roads protected by ed stone or gravel?						
1.09	Are te	mporary exposed slopes properly covered?					$\overline{\mathbf{V}}$	
1.10	Are ea	arthworks final surfaces well compacted or protected?		\checkmark				
1.11	Are m	anholes adequately covered or temporarily sealed?		\checkmark				
1.12	Are th	ere any procedures and equipment for rainstorm protection?		\checkmark				
1.13	Are w	heel washing facilities well maintained?					$\overline{\checkmark}$	
1.14	ls run	off from wheel washing facilities avoided?					\checkmark	
1.15	Are th	ere toilets provided on site?		\checkmark				
1.16	Are to	ilets properly maintained?		\checkmark				
1.17		e vehicle and plant servicing areas paved and located within lareas?					$\overline{\checkmark}$	
1.18	Is the	oil/grease leakage or spillage avoided?		\checkmark				
1.19	Are the	nere any measures to prevent leaked oil from entering the ge system?		\checkmark				
1.20	Are t	nere any measures to collect spilt cement and concrete ngs during concreting works?		\checkmark				
1.21	Are th	ere any oil interceptors/grease traps in the drainage systems nicle and plant servicing areas, canteen kitchen, etc?					$\overline{\checkmark}$	



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.22	Are the oil interceptors/grease traps maintained properly?					\checkmark	
1.23	Is used bentonite recycled where appropriate?					\checkmark	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m3 capacities for sedimentation.					\checkmark	
1.25	No excavation is undertaken in the settlement area.					\checkmark	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.					\checkmark	
1.27	Mobile toilets should provide on site and located away the stream course.		\checkmark				
1.28	License collector should be employed for handling the sewage of mobile toilet.		\checkmark				
1.29	Is ponding /stand water avoided?		\checkmark				
Section	on 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?					\checkmark	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?		\checkmark				
2.03	Are the excavated materials sprayed with water during handling?					\checkmark	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?		\checkmark				
2.05	Is the exposed earth properly treated within six months after the last construction activities?					\checkmark	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?					\checkmark	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?					\checkmark	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?					\checkmark	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?					\checkmark	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?					\checkmark	
2.11	Is dark smoke emission from plant/equipment avoided?		\checkmark				
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?					\checkmark	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?					\checkmark	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?		\checkmark				
2.15	Is open burning avoided?		\checkmark				
2.16	Excavated materials from the stream must be removed from the site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.					$\overline{\checkmark}$	
Sectio	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?					\checkmark	
3.02	Is silenced equipment adopted?					$\overline{\checkmark}$	
3.03	Is idle equipment turned off or throttled down?	\checkmark					
3.04	Are all plant and equipment well maintained and in good condition?		\checkmark				
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?					\checkmark	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?					\checkmark	
3.07	Are air compressors fitted with valid noise emission labels during operation?					$\overline{\checkmark}$	



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
3.08	Are flaps and panels of mechanical equipment closed during operation?					$\overline{\checkmark}$	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?					\checkmark	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?					\checkmark	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?					\checkmark	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).					$\overline{\checkmark}$	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)					\checkmark	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).					\checkmark	
Sectio	n 4: Waste/Chemical Management						
4.01	Waste Management Plan had been submit to Engineer for approval.		\checkmark				
4.02	Are receptacles available for general refuse collection?		\checkmark				
4.03	Is general refuse sorting or recycling implemented?		\checkmark				
4.04	is general refuse disposed of properly and regularly?		\checkmark				
4.05	Is the Contractor registered as a chemical waste producer?					\checkmark	
4.06	Are the chemical waste containers and storage area properly labelled?					\checkmark	
4.07	Are the chemical wastes stored in proper storage areas?					\checkmark	
4.08	Is the chemical container or equipment provided with drip tray?					\checkmark	
4.09	Is the chemical waste storage area used for storage of chemical waste only?					\checkmark	
4.10	Are incompatible chemical wastes stored in different areas?					$\overline{\checkmark}$	
4.11	Are the chemical wastes disposed of by licensed collectors?					\checkmark	
4.12	Are trip tickets for chemical wastes disposal available for inspection?					\checkmark	
4.13	Are chemical/fuel storage areas bounded?					\checkmark	
4.14	Are designated areas identified for storage and sorting of construction wastes?					\checkmark	
4.15	Are construction wastes sorted (inert and non-inert) on site?		\checkmark				
4.16	Are construction wastes reused?		\checkmark				
4.17	Are construction wastes disposed of properly?		\checkmark				
4.18	Are site hoardings and signboards made of durable materials instead of timber?		\checkmark				
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?		\checkmark				
4.20	Are appropriate procedures followed if contaminated material exists?					\checkmark	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?					\checkmark	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.		\checkmark				
4.23	Contaminated sediments will be managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.					\checkmark	

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Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Sectio	n 5: Landscape & Visual						
5.01	Are retained and transplanted trees in health condition?					\checkmark	
5.02	Are retained and transplanted trees properly protected?						
5.03	Are surgery works carried out for the damaged trees?	V					
5.04	Is damage to trees outside site boundary due to construction activities avoided?		V				
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?						
Sectio	n 6: Others						
5.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?						
	k Kwu Wan) narks:						
			Marrien	/ D4 M-		·	
Eine							
Finc	lings of Site Inspection: (21 March 2014)	Fo	now up	(21 Wa	rch 2014	1	
No e	environmental issue was observed during the site ection	<u>Fo</u> Nil.		(21 Wa	rcn 2014	1	
No e	environmental issue was observed during the site			(21 Wa	rcn 2014	1	
No e	environmental issue was observed during the site			(21 Ma	rcn 2014	1	
No e	environmental issue was observed during the site			(21 Ma	rcn 2014	1	
No e	environmental issue was observed during the site			(21 Ma	rcn 2014	1	
No e	environmental issue was observed during the site			(21 Ma	rcn 2014	1	
No e	environmental issue was observed during the site			(21 Ma	rcn 2014	1	
No e	environmental issue was observed during the site			(21 Ma	rcn 2014	1	
No e	environmental issue was observed during the site			(21 Ma	ren 2014	1	
No e	environmental issue was observed during the site			(21 Ma	ren 2014	1	



Appendix M

Implementation Schedule of Mitigation Measures



Implementation Schedule of Air Quality Measures

EIA	EM&A	Environmental Protection Measures*	Location /	Implementation		olementa Stages*		Relevant Legislation
Ref	Ref	Environmental Protection Measures*	Timing	Agent	D	C	О	& Guidelines
Consti	uction Phase							
3.32	2.34	Installation of 2m high solid fences around the construction site of Pumping Station P2.	Work site / during construction	Contractor				
3.34	2.34	 Adopting the following good site practices and follow the dust control requirements of the Air Pollution Control (Construction Dust) Regulation: Stockpiles of imported material kept on site should be contained within hoardings, dampened and / or covered during dry and windy weather; Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses; Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like. Any vehicle used for moving sands, aggregates and construction waste should have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin. 	Work site / during construction	All contractors		V		EIAO-TM, APCO, Air Pollution Control (Construction Dust) Regulation
3.36	Section 2	1 hour and 24 hour dust monitoring and site audit	Designated air monitoring locations / throughout construction period	Contractor/ Environmental Team		√ 		EM&A Manual

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^{**} D=Design, C=Construction, O=Operation



Implementation Schedule of Noise Measures

EIA	EM&A	Environmental Protection Measures*	Location/Timing	Implementation	_	olementa Stages *		Relevant Legislation &
Ref	Ref			Agent	D	C	0	Guidelines
Construct	tion Phase							
4.41-4.43	3.19	 Use of quiet PME for the construction of the pumping stations Use of temporary noise barrier during the construction of Pumping Station P1a 	Work site /during the construction of Pumping Stations	Contractor		√		EIAO-TM, NCO
4.44 – 4.49	3.19	 Implementation of following measures during the sewer construction: Use of quiet PME or method; Restriction on the number plant (1 item for each type of plant); and Good Site Practices Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. Mobile plant, if any, should be sited as far away from NSRs as possible. Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. 	Work site /during the construction of Sewer.	Contractor		V		



EIA	EM&A	Environmental Protection Measures*	Location/Timing	Implementation		lementa Stages *:		Relevant Legislation &
Ref	Ref			Agent	D	C	O	Guidelines
4.50 – 4.53	3.19	 Use of noise screening structures such as acoustic shed and barrier wherever practicable and feasible in areas with sufficient clearance and headroom. Adoption of manual working method wherever practicable and feasible in areas where the worksites of the proposed sewer alignment are located less than 20 m from the residential NSRs and less than 30 m from the temple (THT) and the public library. Use of PME for the construction of the section of sewer between the NSR and the Pumping Station P1a should not be allowed during the excavation work of Pumping Station P1a. 	Work site /during the construction of Sewer.	Contractor		V		
4.60	Section 35	Noise monitoring	Designated noise monitoring locations / throughout construction period	Contractor/ Environmental Team		√		EM&A Manual

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^{**} D=Design, C=Construction, O=Operation



Implementation Schedule of Water Quality Control Measures

EIA	EM&A	Environmental Protection Measures*	Location (duration	Implementation	Implementation Stages**			Relevant Legislation
Ref	Ref	Environmental Frotection Measures.	/completion of measures)	Agent	D	C	0	and Guidelines
	ruction Phas		1	1				1
5.77	4.35	No-dig method using Horizontal Directional Drilling (HDD) would be used for the installation of outfall pipe of about 480 m from shore to minimize the potential water quality impacts arising from the dredging works required for the submarine outfall construction. Silt curtains will be installed around the exit area of the pilot drill.	Marine works site / During construction of submarine outfall	Contractor		√ 		
5.73	4.36	Dredging Works	Marine works site	Contractor		√		
5.78		 Implementation of following measures during the dredging works: dredging should be undertaken using closed grab dredgers with a maximum total production rate of 55m³/hr; deployment of 2-layer silt curtains with the first layer enclosing the grab and the second layer at around 50m from the dredging area while dredging works are in progress; dredging operation should be undertaken during ebb tide only; all vessels should be sized such that adequate clearance (i.e. minimum clearance of 0.6m) is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; all pipe leakages should be repaired promptly and plant should not be operated with leaking pipes; 	and at the identified water sensitive receivers/ During construction					
		 excess material should be cleaned from the decks and exposed fittings of barges before the vessel is moved; adequate freeboard (i.e. minimum of 200mm) should be maintained on barges to ensure that decks are not washed by wave action; all barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; loading of barges should be controlled to prevent splashing of dredged material to the surrounding water, and barges should not be filled to a level which will cause the overflow of materials or polluted water during loading or transportation; and 						



EIA	EM&A		Location (duration /completion of	Implementation	Implementation Stages**			Relevant Legislation
Ref	Ref	Environmental Protection Weasures	measures)	Agent	D	C	O	and Guidelines
		• the decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard.						
5.79	4.37	Construction Run-off and Drainage	Construction works	Contractor		V		ProPECC
		Implementation of the following site practices outlined in ProPECC PN 1/94 for "Construction Site Drainage"	sites					PN 1/94
		• Provision of perimeter channels to intercept storm-runoff from outside the site. These should be constructed in advance of site formation works and earthworks.						
		• Works programmes should be designed to minimize works areas at any one time, thus minimizing exposed soil areas and reducing the potential for increased siltation and runoff.						
		• Sand / silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove the sand / silt particles from run-off. These facilities should be properly and regularly maintained. These facilities should be carefully planned to ensure that they would be installed at appropriate locations to capture all surface water generated on site.						
		• Careful programming of the works to minimise soil excavation works during rainy seasons.						
		• Exposed soil surface should be protected by paving or hydroseeding as soon as possible to reduce the potential of soil erosion.						
		• Trench excavation should be avoided in the wet season, and if necessary, these should be excavated and backfilled in short sections.						
		Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric						
5.80	4.38	General Construction Activities	Construction works	Contractor		$\sqrt{}$		
		Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal waters and stormwater drains. All fuel tanks and storage areas should be provided	sites					



EIA	EM&A	Environmental Protection Measures*	Location (duration /completion of	Implementation	-	ement tages*	Relevant Legislation	
Ref	Ref	Environmental Protection Measures	measures)	Agent	D	C	0	and Guidelines
		with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.						
5.81	4.39	Wastewater Arising from Workforce Portable toilets should be provided by the Contractors, where necessary, to handle sewage from the workforce. The Contractor should also be responsible for waste disposal and maintenance practices.	Construction works sites	Contractor		V		
5.96	Section 4	Water quality monitoring	Designated water monitoring locations/ throughout construction period	Contractor		V		EM&A Manual

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^{**} D=Design, C=Construction, O=Operation

N/A Not applicable



Implementation Schedule of Sediment Contamination Mitigation Measures

EIA	EM&A	Environmental Protection Measures*	Location / Timing	Implementation	Implementation Stages**			Relevant Legislation &	
Ref	Ref	Environmental Protection (vicasures	Location / Timing	Agent	D	C	O	Guidelines	
6.17	5.3	Follow the requirement and procedures for dredged mud disposal specified under the WBTC No. 34/2002.	Marine works site / during dredging works	Contractor		1		WBTC No. 34/2002	
6.18	5.4	Implement appropriate dredging methods which have been incorporated into the recommended water quality mitigation measures.	Marine works site, during dredging works	Contractor		√			
6.19	5.5	 During the transportation and disposal of the dredged sediment, the following measures should be taken: Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved. Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self monitoring devices as specified by the DEP. 	Marine works site and at the identified sensitive receivers	Contractor		√ 			

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^{**} D=Design, C=Construction, O=Operation

N/A Not applicable



Implementation Schedule of Solid Waste Management Measures

EIA	EM&A	&A F	Location /	Implementation -	Implementation Stages **			Relevant Legislation &
Ref	Ref	Environmental Protection Measures*	Timing		D	С	0	Guidelines
Construct	tion Phase			1		I	1	-
7.14	6.4	 Good site practices Nomination of an approved person, such as a site manager, to be responsible for implementation of good site practices, arranging for collection and effective disposal to an appropriate facility, of all wastes generated at the site Training (proper waste management and chemical handling procedure) should be provided for site staffs Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. Provision of sufficient waste disposal points and regular collection for disposal. Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility. Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. Maintain records of the quantities of wastes generated, recycled and disposed. 	Work sites/During construction	Contractor		٨		Waste Disposal Ordinance (Cap.54)
7.15	6.5	To monitor the disposal of C&D waste at landfills and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.	Work sites/During construction	Contractor		V		WBTC No. 21/2002
7.16	6.6	Recommendations to achieve waste reduction include: • segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • to encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated	Work sites/During construction	Contractor		V		WBTC No. 4/98, 5/98



EIA	EM&A	&A	Location /	Implementation		olementa Stages **		Relevant Legislation &
Ref	Ref	Environmental Protection Measures*	Timing	Agent	D	C	0	Guidelines
	No.	 by the work force; any unused chemicals or those with remaining functional capacity should be recycled; use of reusable non-timber formwork to reduce the amount of C&D material; prior to disposal of C&D waste, it is recommended that wood, steel and other metals should be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill; proper storage and site practices to minimise the potential for damage or contamination of construction materials; and 		rigent				Gulatilitis
7.18	6.7	 plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. General Site Wastes	Work	Contractor		V		Public Health and
		 A collection area for construction site waste should be provided where waste can be stored prior to removal from site An enclosed and covered area for the collection of the waste is recommended to reduce 'wind blow' of light material 	sites/During construction					Municipal Services Ordinance (Cap. 132)
7.19-7.20	6.8 – 6.9	 Chemical Wastes After use, chemical waste should be handled according to the Code of Practice on the Package, Labelling and Storage of Chemical Wastes Any unused chemicals or those with remaining functional capacity should be recycled Waste should be properly stored on site within suitably designed containers and should be collected by an approved licensed waste collectors for disposal at the Chemical Waste Treatment Facility or other licenced facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordance. 	Work sites/During construction	Contractor		√ 		Waste Disposal (Chemical Waste) (General) Regulation, Code of Practice on the Packaging Labelling and Storage of Chemical Wastes



EIA	EM&A		Location /	Implementation -		olementa Stages *:		Relevant Legislation &
Ref	Ref	Environmental Protection Measures*	Timing		D	C	O	Guidelines
		• Any service shop and minor maintenance facilities should be located on hard standing within a bunded area, and sumps and oil interceptors should be provided.						
		 Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should be undertaken within the designated areas equipped control these discharges 						
7.21-7.22	6.10 – 6.11	Construction and Demolition Material • The C&D waste should be separated on-site into three categories: ▶ public fill, the inert portion of the C&D material (e.g. concrete and rubble), which should be re-used on site or disposed of et a public filling area;	During all construction phases	Contractors		V		WBTC No. 4/98, 5/98, 21/2002, 25/99, 12/2000
		on-site or disposed of at a public filling area; C&D waste for re-use and / or recycling, the non-inert portion of the C&D material, (e.g. steel and other metals, woods, glass and plastic); C&D waste which cannot be re-used and / or recycled (e.g. wood, glass and plastic)						
		recycled (e.g. wood, glass and plastic) • Where possible, inert material should be re-used on-site						
		• Where practicable, steel and other metals should be separated for re-use and/or recycling prior to disposal of C&D material						

^{*} All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

^{**} D=Design, C=Construction, O=Operation



Implementation Schedule of Ecological Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation & Guidelines
			Tilling	Agent	D	C	О	Guidennes
	tion Phase		T	T	1		1	
8.157	7.2	 Terrestrial Ecology Labeling and fencing of the uncommon tree species Avoidance of use of woodland habitats as Works Area, in particular where trees are located 	Work sites / during construction phase	Contractor		√ 		
8.159 – 8.160	7.3	Subtidal Ecology Use of HDD technique Dredging Use of closed-grab dredger Deploy silt curtains during dredging.	Marine works site / during dredging works	Contractor		1		
8.161	7.4	 Site runoff Construction and maintenance of sand / silt removal facilities Silt curtains Timing of earthworks Coverage of sand / fill piles during storms. Barriers along the landward side of Pumping Station P2 site boundary (to prevent site runoff from entering area with Romer's Tree Frog) 	All work sites / during construction phase	Contractor		√		

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^{**} D=Design, C=Construction, O=Operation



Implementation Schedule of Fisheries Impact Measures

EIA	EM&A	Environmental Protection Weasures*		Implementation		lementa Stages*		Relevant Legislation
Ref	Ref		Timing	Agent	D	C	0	& Guidelines
9.29	8.3	Use of closed grab dredging and silt curtains around the immediate dredging area and low dredging rates as recommended in Water Quality of the EIA report	Marine works site, during dredging works	Contractor		V		TM on EIA Process
9.32	Section 8	Water quality monitoring (see Implementation Schedule for Water Quality Control Measures)	Designated monitoring locations / throughout construction period and 1 year following operation of the STW	Contractor and Environmental Team		V	V	EM&A Manual

^{*} All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

^{**} D=Design, C=Construction, O=Operation



Implementation Schedule of Landscape and Visual Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location /	Implementation	Implementation Stages **			Relevant Legislation &
Kei	Kei		Timing	Agent	D	C	O	Guidelines
Constr	uction Pha	ase						
10.74	9.10	Retaining existing trees and minimizing damage to vegetation by close coordination and on site alignment adjusted of rising main and gravity sewer pipelines.	All sites	Contractor		$\sqrt{}$		WBTC No. 14/2002
		Careful and efficient transplanting of affected trees to temporary or final transplant location (the proposed tree to be transplanted is a semi-mature <i>Macaranga tanarius</i> and is located at the proposed Pumping Station P2 location).	All sites	Contractor		V		WBTC No. 14/2002
		Short excavation and immediate backfilling sections upon completion of works to reduce active site area.	All sites	Contractor		√		
		Screening of site construction works by use of hoarding that is appropriate to its site.	All sites	Contractor		V		WBTC No. 19/2001
		Conservation of topsoil for reuse.	All sites	Contractor		√		
		Night-time light source from marine fleets should be directed away from the residential units.	Outfall area.	Contractor		V		

^{*} All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

^{**} D=Design, C=Construction, O=Operation



Appendix N

Tree Inspection Report

經緯園藝有限公司

Melofield Nursery & Landscape Contractor Ltd

元朗下攸田村 125 號 125, Ha Yau Tin Tsuen, Yuen Long, N.T.

TEL: (852) 2572-0048 FAX: (822)2573-9099 E-mail: melofield@netvigator.com

Contract No. DC/2009/13

Project Name: Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

Sok Kwu Wan

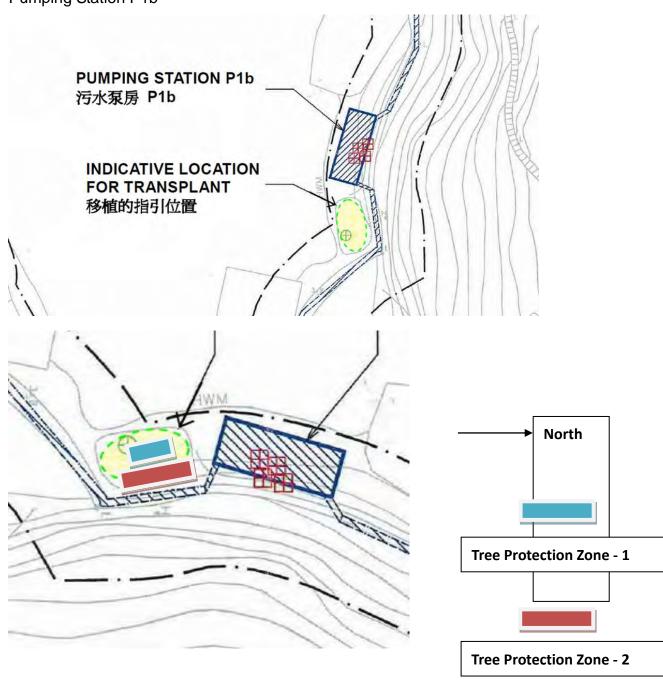
Tree Inspection Report for Celtis timorensis

Inspection Date: 28-02-2014



1. Introduction

According to the requirement in the Environmental Permit EP-281/2007/A, the uncommon tree species, *Celtis timorensis*, found in the pumping station P1b area as shown in figure below shall be properly transplanted to the area immediately south of the Pumping Station P1b before commencement of construction of the Pumping Station P1b



This Tree Inspection Report describes the bi weekly monitoring result of the *Celtis timorensis*, which were additionally planted as the compensation of previously transplanted Celtis timorensis CT7, CT8, CT9 & CT10.

2. Summary of Inspection

Date of Inspection	28 February 2014, around 15:30
Location	A soil ground adjacent to the Pumping
	Station P1b Chung Mei, at Sok Kwu Wan,
	Lamma Island.
Weather	Cloudy, the vegetations are located under
	the shade of existing tall trees.
The labeled Celtis timorensis	CT_5A & CT_6A
under Tree Protection Zone 2	

3. Proposed Inspection Schedule

Month	Actual / proposed Inspection Date
October, 2011	10 and 24 October 2011
November, 2011	8 November 2011
December, 2011	14 and 30 December 2011
January 2012	31 January 2012
February 2012	15 and 29 February 2012
March 2012	15 and 31 March 2012
April 2012	16 and 30 April 2012
May 2012	15 and 31 May 2012
June 2012	15 and 30 June 2012
July 2012	16 and 30 July 2012
August 2012	15 and 31 August 2012
September 2012	15 and 29 September 2012
October 2012	15 and 31 October 2012
November 2012	15 and 30 November 2012
December 2012	15 and 30 December 2012
January 2013	15 and 30 January 2013
February 2013	15 and 28 February 2013
March 2013	15 and 30 March 2013
April 2013	15 and 30 April 2013
May 2013	15 and 30 May 2013
June 2013	15 and 29 June 2013

Bi Weekly Tree Inspection Report for *Celtis timorensis* at Sok Kwu Wan Inspection Date: 28 February 2014

July 2013	15 and 31 July 2013
August 2013	15 and 31 August 2013
September 2013	14 and 30 September 2013
October 2013	15 and 31 October 2013
November 2013	15 and 30 November 2013
December 2013	14 and 31 December 2013
January 2014	15 and 30 January 2014
February 2014	15 and 28 February 2014

4. Summary of Inspection Result

Tree No	Speciation	Health Status
CT_5A	Celtis timorensis	Good
CT_6A	Celtis timorensis	Good

Inspection parameters or criteria

Good Leaves and stem grown very lush, additional or larger in size of leaves can be observed in each inspection

Fair Green leaves can be found. No major unhealthy condition of the plant is observed. The condition is stable.

Poor Fewer green leaves than usual are observed. No new leaf is grown and the condition keep stable. The bark is dry. The plant is weak.

Very Poor No new green leaf or bud can be observed. The bark is dry. The plant is weak.



Current Status: Good

Justification: Significant improvement in health. The plant was healthy. Some leaves were damaged by insect.

5. Description of Inspection Results:

Tree ID: CT_5A

Tree ID: CT_6A



Current Status: Good

Justification: Significant improvement in health. The plant was healthy.

Overall Condition

In the Tree Protection Zone 2, The health of CT_5A and CT_6A were found satisfactory. Regular watering and weeding will be carried out during dry weather. They may better recover under this warm and rainy weather. Some newly grown green leaves were found eaten by insects. Remove any insect found on the plant physically to prevent the bud attacked by leaf-feeding insect. No pesticide should be used when the plants are weak.

Considering CT2A, CT3A were lost due to typhoon, compensatory of additional Celtis timorensis is proposed and will be carried out in the coming warm weather season for better growing.

經緯園藝有限公司

Melofield Nursery & Landscape Contractor Ltd

元朗下攸田村 125 號 125, Ha Yau Tin Tsuen, Yuen Long, N.T.

TEL: (852) 2572-0048 FAX: (822)2573-9099 E-mail: melofield@netvigator.com

Contract No. DC/2009/13

Project Name: Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

Sok Kwu Wan

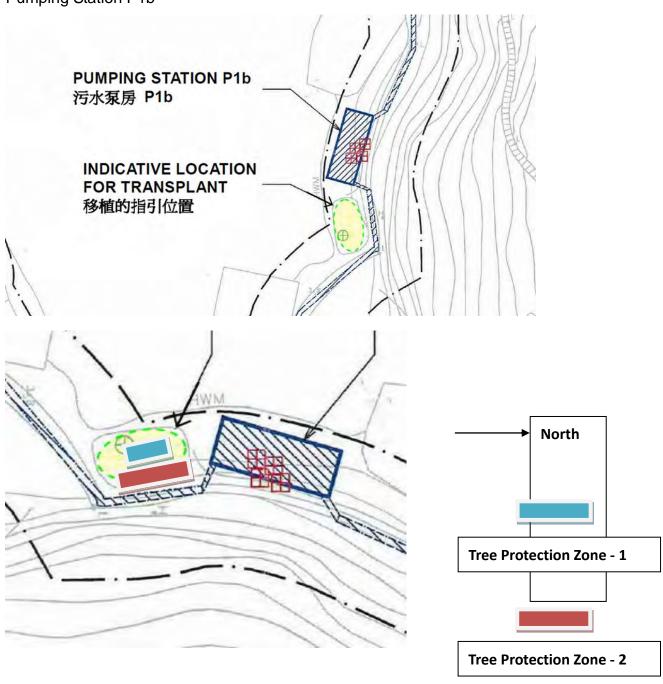
Tree Inspection Report for Celtis timorensis

Inspection Date: 15-03-2014



1. Introduction

According to the requirement in the Environmental Permit EP-281/2007/A, the uncommon tree species, *Celtis timorensis*, found in the pumping station P1b area as shown in figure below shall be properly transplanted to the area immediately south of the Pumping Station P1b before commencement of construction of the Pumping Station P1b



This Tree Inspection Report describes the bi weekly monitoring result of the *Celtis timorensis*, which were additionally planted as the compensation of previously transplanted Celtis timorensis CT7, CT8, CT9 & CT10.

2. Summary of Inspection

Data of Inspection	15 March 2014, around 15:20	
Date of Inspection	15 March 2014, around 15:30	
Location	A soil ground adjacent to the Pumping	
	Station P1b Chung Mei, at Sok Kwu Wan,	
	Lamma Island.	
Weather	Cloudy, the vegetations are located under	
	the shade of existing tall trees.	
The labeled Celtis timorensis	CT_5A & CT_6A	
under Tree Protection Zone 2		

3. Proposed Inspection Schedule

Month	Actual / proposed Inspection Date	
October, 2011	10 and 24 October 2011	
November, 2011	8 November 2011	
December, 2011	14 and 30 December 2011	
January 2012	31 January 2012	
February 2012	15 and 29 February 2012	
March 2012	15 and 31 March 2012	
April 2012	16 and 30 April 2012	
May 2012	15 and 31 May 2012	
June 2012	15 and 30 June 2012	
July 2012	16 and 30 July 2012	
August 2012	15 and 31 August 2012	
September 2012	15 and 29 September 2012	
October 2012	15 and 31 October 2012	
November 2012	15 and 30 November 2012	
December 2012	15 and 30 December 2012	
January 2013	15 and 30 January 2013	
February 2013	15 and 28 February 2013	
March 2013	15 and 30 March 2013	
April 2013	15 and 30 April 2013	
May 2013	15 and 30 May 2013	
June 2013	15 and 29 June 2013	

July 2013	15 and 31 July 2013	
August 2013	15 and 31 August 2013	
September 2013	14 and 30 September 2013	
October 2013	15 and 31 October 2013	
November 2013	15 and 30 November 2013	
December 2013	14 and 31 December 2013	
January 2014	15 and 30 January 2014	
February 2014	15 and 28 February 2014	
March 2014	15 March 2014	

4. Summary of Inspection Result

Tree No	Speciation	Health Status
CT_5A	Celtis timorensis	Good
CT_6A	Celtis timorensis	Good

Inspection parameters or criteria

Good Leaves and stem grown very lush, additional or larger in size of leaves can be observed in each inspection

Fair Green leaves can be found. No major unhealthy condition of the plant is observed. The condition is stable.

Poor Fewer green leaves than usual are observed. No new leaf is grown and the condition keep stable. The bark is dry. The plant is weak.

Very Poor No new green leaf or bud can be observed. The bark is dry. The plant is weak.

5. Description of Inspection Results:

Tree ID: CT_5A



Current Status: Good

Justification: Significant improvement in health. The plant was healthy. Some leaves were damaged by insect.

Tree ID: CT 6A



Current Status: Good

Justification: Significant improvement in health. The plant was healthy.

Overall Condition

In the Tree Protection Zone 2, The health of CT_5A and CT_6A were found satisfactory. Regular watering and weeding will be carried out during dry weather. They may better recover under this warm and rainy weather. Some newly grown green leaves were found eaten by insects. Remove any insect found on the plant physically to prevent the bud attacked by leaf-feeding insect. No pesticide should be used when the plants are weak.

Considering CT2A, CT3A were lost due to typhoon, compensatory of additional Celtis timorensis is proposed and will be carried out in the coming warm weather season for better growing.